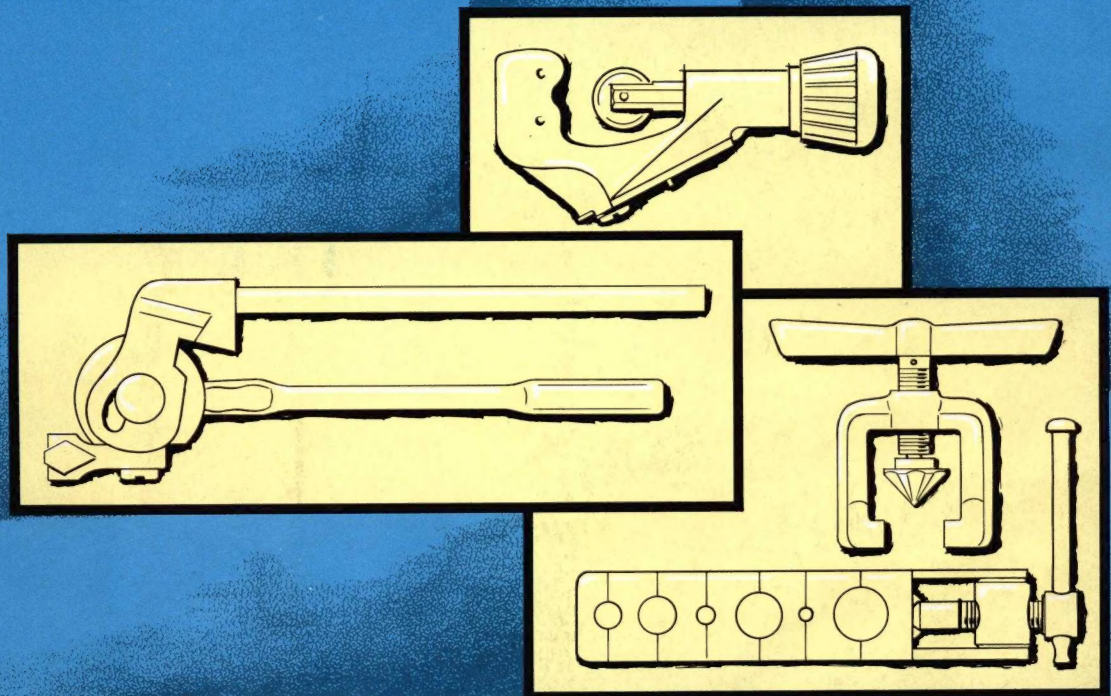


IMPERIAL TUBING TOOLS

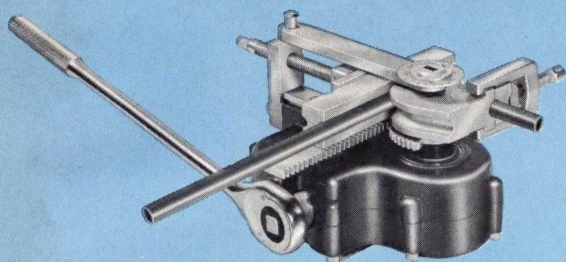


IMPERIAL-EASTMAN CORPORATION, 6300 W. HOWARD ST., CHICAGO 48, ILL.

In Canada: Imperial-Eastman Corporation (Canada), Ltd., Barrie, Ont.



NEW IMPERIAL TUBE BENDERS



No. 700-F GEAR-TYPE TUBE BENDER

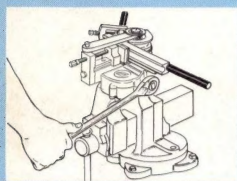
Makes bends up to 180° in stainless steel tubing, conforming to Specification MIL-T-6845. Precision construction maintains original diameter of tube within 5% at bend. Also bends copper, aluminum and other types of tubing. Calibrated dial indicates angle of bend.

Tubing Wall Thickness and Bend Radii for
Stainless Steel (MIL-T-6845) Tubing

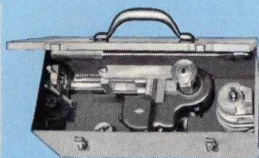
(In some cases these wall thicknesses can be exceeded for copper and aluminum tubing. Experimentation is suggested to determine what thicknesses can be bent successfully.)

O.D. Tube In.	Wall Thickness In.	Bend Radius to Center of Tube In.
1/4	.016 to .049	3/16
5/16	.020 to .065	1/8
3/8	.028 to .083	15/16
1/2	.035 to .083	1 1/4
5/8	.042 to .083	1 1/2
3/4	.049 to .083	1 3/4

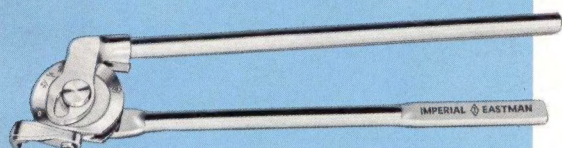
No. 700-F Gear-Type Tube Bender for 1/4, 5/16, 3/8, 1/2, 5/8 and 3/4" O.D. tubing. Wt. (in steel case) 32 lbs. Conforms to Federal Specification GGG-B-191.



Tool is designed to be clamped in vise.



Size of kit: 16x7x6 1/2".
Patent Pending



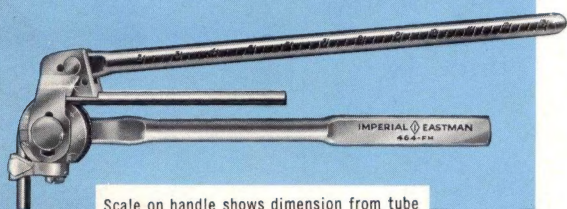
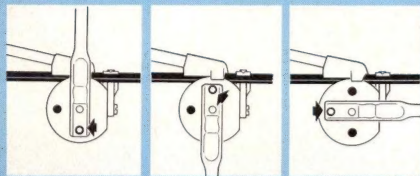
No. 364-FH 3-POSITION LEVER-TYPE TUBE BENDER

Has 3 selective starting positions — 90°, 180°, 270° — obtained by a simple adjustment of handle. Provides outstanding advantages in hard-to-get places where tubing has been partially connected. Bends hard drawn copper, steel (including J.I.C.), stainless steel and soft tubing. Wide clamp will not mar tubing. Calibrated to show angle of bend.

Order by Catalog Number and O.D. Tube Size

Catalog No.	Outside Diameter of Tubing	Nominal Size	Radius to Center of Tube	Weight Each (Lbs.)
364-FH	3/8	1/4	15/16	1 3/4
364-FH	7/16	—	1 1/2	3 1/2
364-FH	1/2	3/8	1 1/2	3 1/2

3 selective starting positions obtained by adjusting handle and repositioning clamp screw in back of wheel.



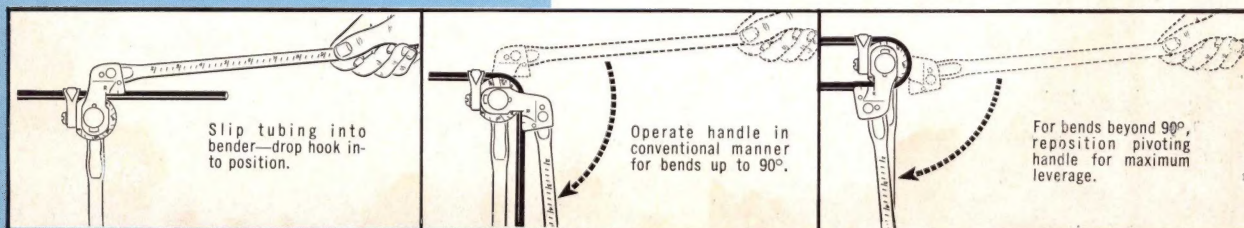
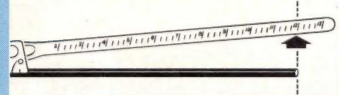
No. 464-FH BLUE-DOT DOUBLE-ACTION TUBE BENDER

Double-action leverage permits positioning handle to maintain maximum mechanical advantage throughout bending operation. Measuring scale on handle shows dimension from tube end to center of bend. Also calibrated to show bend angle.

Makes bends to 180° in hard drawn copper, steel (including JIC), aluminum, stainless steel and soft tubing.

No. 464-FH 3/8" Double-Action Tube Bender for 3/8" O.D. (1/4" nominal) tubing.

Scale on handle shows dimension from tube end to center of bend.



Slip tubing into bender—drop hook into position.

Operate handle in conventional manner for bends up to 90°.

For bends beyond 90° reposition pivoting handle for maximum leverage.

important features of

IMPERIAL TUBING TOOLS

TUBE CUTTERS

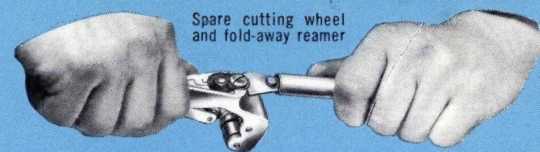
- Spare cutting wheels and fold-away reamers on popular models.
- Ball bearing thrust in enclosed feed mechanism minimizes effort required to cut harder tubing and guards against wear.
- Quick slide-to-size and instant tube release mechanism on cutters for larger tubing.

FLARING TOOLS

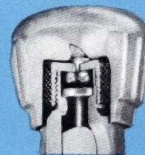
- Hard chrome-finished cones on all popular models. Cuts torque required by up to 55% and makes far smoother flares.
- Ball thrust mechanism in flaring cones on tools for larger diameter tubing, double flaring and hard to flare tubing. Minimizes friction between flaring cone and stem. Considerably less force required to advance flaring cone.
- Flares rolled out in air above die bar by faceted cone on many Imperial tools. This feature reduces effort required, produces a far finer flare and also permits making over-size or "bull" flares.

LEVER-TYPE BENDERS

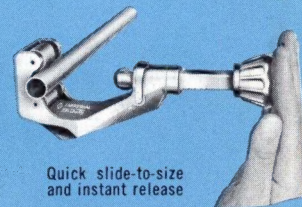
- Wide, smooth surface hooks eliminate tube slippage and "hook bite" on tubing.
- Patented, extra-deep groove in forming wheels gives greater gripping area and cuts the frictional surface exposed to forming shoe. This allows bends to be made far easier and stops tube slippage which causes kinks and flats in the bend. Also minimizes score marks.
- Patented quick-opening feature on one piece lever-type benders saves time and trouble.



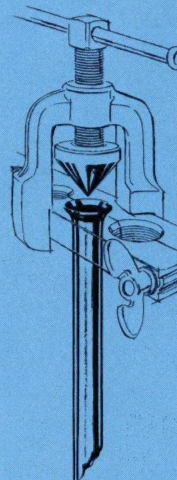
Spare cutting wheel and fold-away reamer



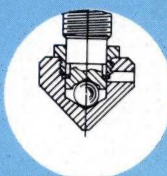
Ball bearing thrust in enclosed feed



Quick slide-to-size and instant release



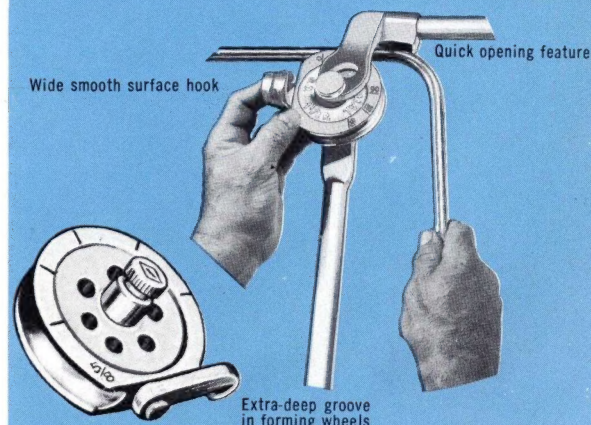
Ball thrust mechanism in flaring cones



Hard chrome-finished flaring cones



Faceted flaring cone rolls flares above die



Wide smooth surface hook

Quick opening feature

Extra-deep groove in forming wheels

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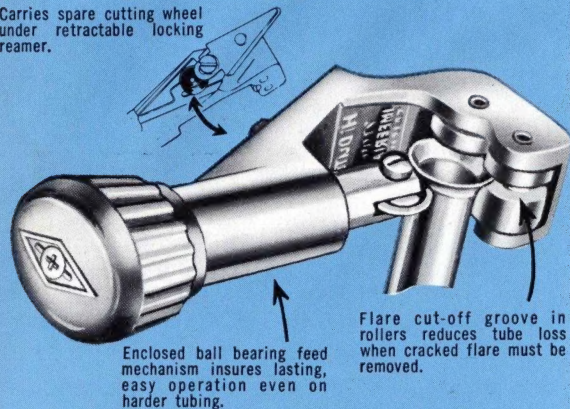
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CUTTING

CUTTING CAPACITY

$\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. ($\frac{1}{8}$ to 1" nom.)
Cuts hard or soft copper, aluminum, brass,
thin-wall steel, block tin, lead and other
tubing.

Carries spare cutting wheel
under retractable locking
reamer.



Pat. Nos. D-161,438; 2,629,926; 2,784,618; Pat. Can. 1956

No. 274-FA HI-DUTY TUBE CUTTER

Makes clean, right-angle cuts with no burrs or chips to clog tubing. Roller type with flare cut-off groove, fold away reamer and spare cutting wheel. Rugged aluminum alloy body designed for handling ease.

No. 274-FA* Hi-Duty Tube Cutter for $\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. Tubing. ($\frac{1}{8}$ to 1" nom.) Length $4\frac{3}{4}$ inches, Wt. $6\frac{1}{2}$ oz.

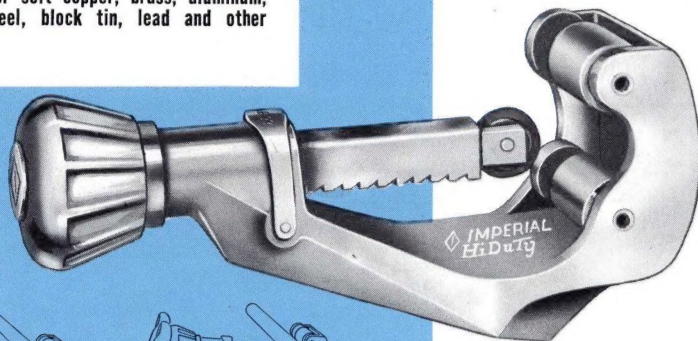
No. 312-FA* Hi-Duty Cutter for $\frac{1}{4}$ to $1\frac{3}{8}$ " O.D. Tubing. ($\frac{1}{8}$ to $1\frac{1}{4}$ " nom.) Length $5\frac{1}{2}$ inches, Wt. 7 oz.

No. 70119 — Cutting Wheel for stainless steel or hard temper copper tubing.

***Conforms to Federal Specification GGG-C-771b, 9-13-56 and Amendment 1, 3-17-59. Type II, Class 1.**

CUTTING CAPACITY

$\frac{5}{8}$ to $2\frac{1}{4}$ " O.D. ($\frac{1}{2}$ to 2" nom.)
Cuts hard or soft copper, brass, aluminum,
thin-wall steel, block tin, lead and other
tubing.



Makes clean, right-angle cuts. Ratchet feature permits instant adjustment to tube size . . . permits cutter to open instantly to maximum size. Enclosed feed mechanism assures lasting, easy operation. Light weight aluminum body; large fluted handle for secure grip.

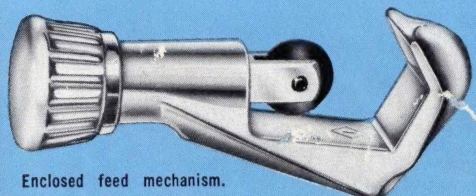
No. 206-F Adjust-O-Matic Tube Cutter, for tubing from $\frac{5}{8}$ to $2\frac{1}{4}$ " O.D. ($\frac{1}{2}$ to 2" nom.) Length $6\frac{1}{2}$ ", Wt. $1\frac{1}{2}$ lbs.

Pat. Nos. D-161,438; 2,787,054; Other patents pending

Conforms to Federal Specification GGG-C-771b, 9-13-56 and Amendment 1, 3-17-59. Type II, Class 1.

CUTTING CAPACITY

$\frac{1}{8}$ to $\frac{3}{4}$ " O.D. ($\frac{1}{8}$ to $\frac{5}{8}$ " nom.)
Cuts hard or soft copper, brass, aluminum,
thin-wall steel, block tin, lead and other
tubing.



No. 227-F JUNIOR TUBE CUTTER

Exceptionally handy in close quarters — only $3\frac{1}{2}$ inches overall. Makes quick, clean, right-angle cuts without flattening tube. Built for rugged service. Enclosed feed mechanism protects against dirt and damage.

No. 227-F Junior Tube Cutter for $\frac{1}{8}$ to $\frac{3}{4}$ " O.D. Tubing. ($\frac{1}{8}$ to $\frac{5}{8}$ " nom.) Wt. 5 oz.

Pat. No. D-161,438



No. 374-FA COMBINATION TUBE CUTTER AND CONSTRICTOR

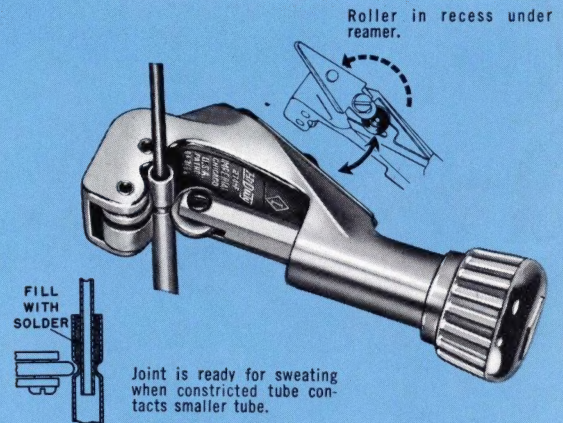
A modified No. 274-FA Tube Cutter that converts into a tube constrictor. Handy for making Braze- or Sweat-type connections. Simply replace cutting wheel with roller carried in the recess under fold-away reamer. Insert smaller tube into larger tube and constrict larger tube as shown.

No. 374-FA Hi-Duty Combination Tube Cutter and Constrictor for $\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. Tubing. Length $4\frac{1}{2}$ inches, Wt. 6 oz.

Pat. Nos. 2,629,926; D-161,438; 2,784,618; Pat. Can. 1956; Other patents pending

CAPACITY

$\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. ($\frac{1}{8}$ to 1" nom.)
Cuts or constricts hard or soft copper, brass, aluminum, thin-wall steel, block tin, lead and other tubing.



No. 406-F HI-DUTY 2-to-4 TUBE CUTTER

For DWV (drain, waste and vent) and other larger tubing. Roller type with ratchet adjustment to tube size, screw-type feed, and instant release. Precision wheel cuts tube without burrs or distortion. Cut-off groove lets you remove damaged flare with minimum tube waste.

No. 406-F Hi-Duty 2-to-4 Cutter for 2 to $4\frac{1}{8}$ " O.D. Tubing. (2 to 4" nom.) Size closed $10\frac{1}{2}$ ", Wt. 2 lbs.

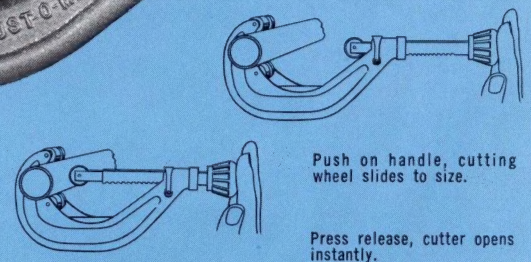
Pat. Nos. D-161,438; 2,787,054; Other patents pending.

**REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.**



CUTTING CAPACITY

2 to $4\frac{1}{8}$ " O.D. (2 to 4" nom.)
Cuts DWV and other copper, aluminum and brass tubing and thin-wall conduit.



No. 227-FP PLASTIC TUBE CUTTER

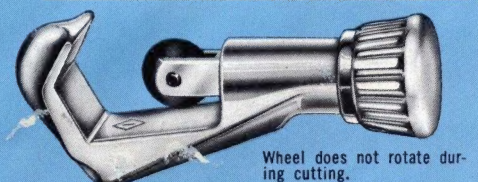
Cuts all plastic tubing quickly with a minimum of effort. Makes clean, right-angle cuts in one or two revolutions of tool. Over-sized, fixed position cutting wheel is super sharp for perfect cuts. For new cutting surface, simply loosen cutting wheel retaining screw, rotate cutting wheel slightly and tighten in new position.

No. 227-FP Tube Cutter for $\frac{1}{8}$ to $\frac{3}{4}$ " O.D. Tubing. Length $3\frac{1}{2}$ inches, Wt. 5 oz.

Pat. No. D-161,438

CUTTING CAPACITY

$\frac{1}{8}$ to $\frac{3}{4}$ " O.D.
Cuts nylon and other plastic tubing.

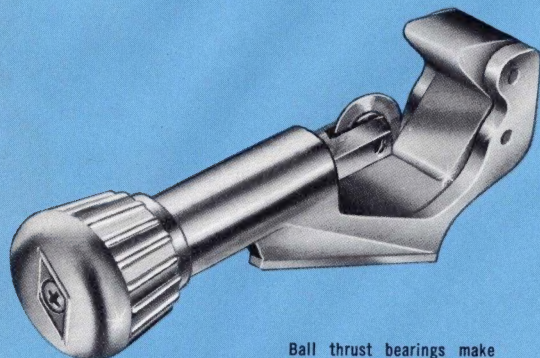


CUTTING

CUTTING CAPACITY

$\frac{1}{8}$ to $\frac{3}{4}$ " O.D.

Cuts Hytron hose, nylon and plastic tubing, and all rubber hose without wire braid.



Ball thrust bearings make this the easiest operating of hose cutters.

No. 312-FP HYTRON HOSE AND PLASTIC TUBE CUTTER

Makes clean, right-angle cuts. Leaves Hytron hose or plastic tubing round, ready for use. Over-size fixed position cutting wheel is super sharp for perfect cuts. For new cutting surface, just loosen retaining screw, rotate cutting wheel slightly and tighten in new position.

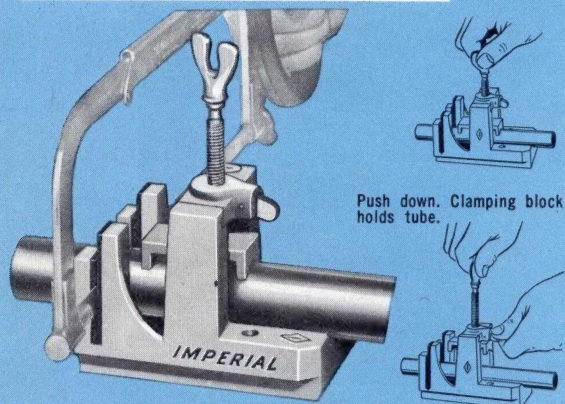
No. 312-FP Cutter for Hytron hose and other plastic tubing in sizes from $\frac{1}{8}$ to $\frac{3}{4}$ " O.D.

Pat. No. D-161,438. Other patents pending

CUTTING CAPACITY

$\frac{1}{8}$ to $1\frac{1}{2}$ " O.D. ($\frac{1}{8}$ to $1\frac{1}{4}$ " nom.)

Holds all types of metal tubing, pipe and pressure hose.



Push down. Clamping block holds tube.

Press release. Tube is free.

Size: 5x3 $\frac{1}{2}$ x5 $\frac{1}{8}$ " high.

No. 384-FA SAWING VISE

Grips tube or hose securely for perfect right-angle cuts. Quick clamp adjustment to tube size. Instant tube release. Removable hardened steel hacksaw guides. No loose parts. Fastens on bench or clamps in vise.

No. 384-FA Sawing Vise for $\frac{1}{8}$ to $1\frac{1}{2}$ " O.D. tube or hose. ($\frac{1}{8}$ to $1\frac{1}{4}$ " nom.) Wt. 2 $\frac{1}{2}$ lbs.

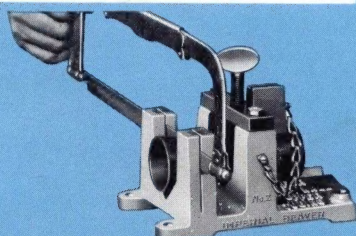
Pat. No. 2,759,385

REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.

CUTTING CAPACITY

$\frac{3}{16}$ to $2\frac{3}{8}$ " O.D. ($\frac{1}{8}$ to 2" nom.)

Holds all types of metal tubing, pipe and pressure hose.



No. 184-F SAWING VISE

Vise grips pipe or tubing securely for perfect right-angle cuts. Holding pressure will not crush, mar or flatten tubing. Removable hardened steel saw guides.

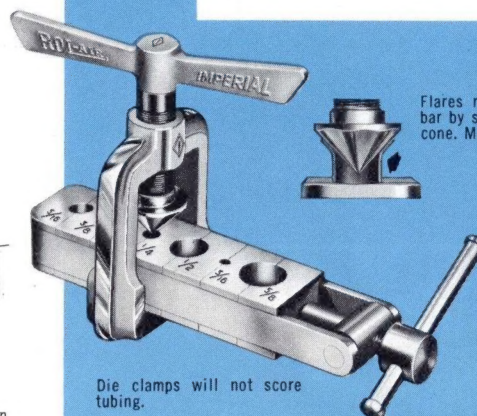
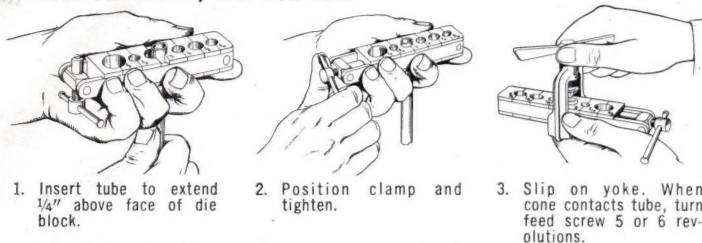
No. 184-F Sawing Vise for $\frac{3}{16}$ to $2\frac{3}{8}$ " O.D. tubing. ($\frac{1}{8}$ to 2" nom.) Wt. 10 $\frac{1}{2}$ lbs.

Conforms to Military Specification MIL-T-1215, July 14, 1949. Par. E-5, Type E

No. 500-F ROL-AIR FLARING TOOL (45°)

Rolls out perfect 45° flares above die block, then automatically burnishes flare face. Faceted, hard chrome-finished cone cuts effort required. Original wall thickness maintained at base of flare. Heat-treated dies clamp tubing without scoring it.

No. 500-F Rol-Air Flaring Tool. Flares and burnishes $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. tubing. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ " nom.) Wt. 1½ lbs.



Die clamps will not score tubing.

Pat. Nos. 2,505,665; 2,505,666; 2,534,510
Pat. Can. 1951 and 1956. Other patents pending

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)

Forms 45° S.A.E. flares in soft copper, aluminum and brass tubing.

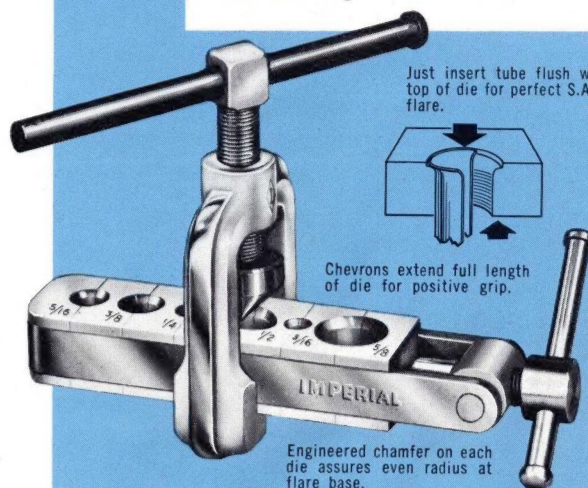
Flares rolled out above die bar by super-smooth faceted cone. Makes stronger flares.

No. 300-F HI-DUTY FLARING TOOL (45°)

Makes exceptionally smooth, high strength flares. Features positive gripping of tube and self-gaging of tube for exact flare size. Hard chrome-finished cone cuts amount of effort needed to make precision flare. Sliding die blocks lock in place by lever clamp action. Chrome-nickel finish adds to tool life.

No. 300-F Hi-Duty Flaring Tool for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. tubing. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.) Wt. 1½ lbs.

Pat. Nos. 2,072,359; 2,505,665; 2,505,666; 2,534,510
Pat. Can. 1951 and 1956. Other patents pending



Just insert tube flush with top of die for perfect S.A.E. flare.

Chevrons extend full length of die for positive grip.

Engineered chamfer on each die assures even radius at flare base.

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)

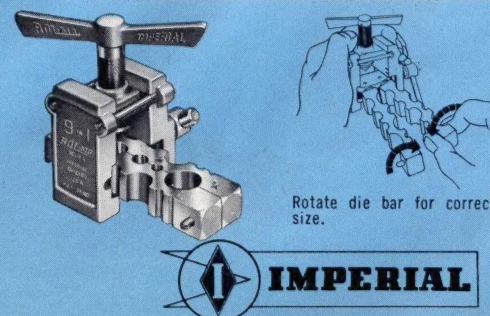
Forms 45° flares in soft copper, aluminum and brass tubing.

No. 900-FA 9-IN-1 FLARING TOOL (45°)

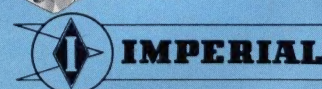
Combines wide range with compactness. Simultaneously flares (45°) and burnishes. Also forms over-size flares. Single unit construction — no separate parts. Split bar revolves to permit use of two sets of hardened steel clamping dies (9 sizes). Fluted chrome-finished cone cuts effort needed to make flare. High strength aluminum yoke.

No. 900-FA 9-in-1 Flaring Tool for $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. tubing. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " nom.) Wt. 1½ lbs.

Pat. Nos. 2,892,480; 2,893,463.



Rotate die bar for correct size.



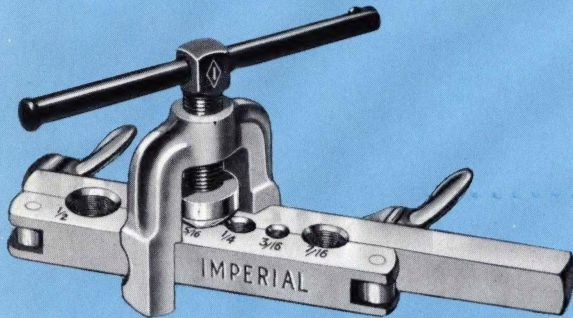
FLARING (45°)

FLARING CAPACITY

No. 193-FA— $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$ "
O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ " nom.)

No. 195-FA— $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ "
O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)

Form 45° S.A.E. flares in soft copper, brass or aluminum.



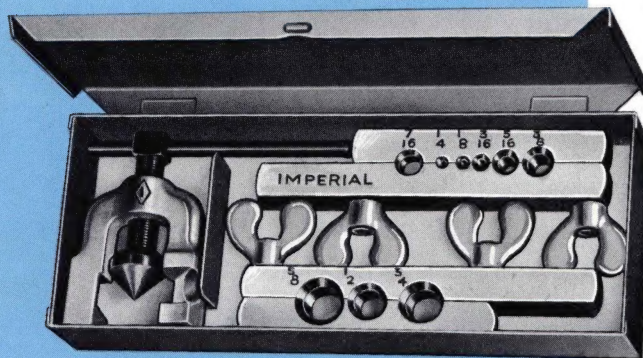
Yoke slips over top of bar then locks into position with slight turn.

FLARING CAPACITY

No. 375-FS— $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " O.D.
($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " nom.)

No. 376-FS— $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " O.D.
($\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " nom.)

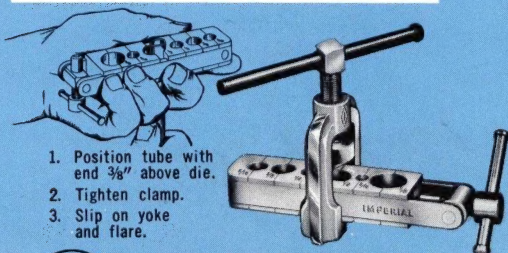
Form 45° flares in soft copper, aluminum or brass.



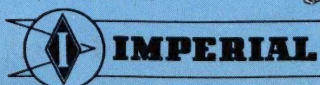
Flares 9 tube sizes.

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D.
Forms 45° flares in Plastic Tubing.



1. Position tube with end $\frac{3}{8}$ " above die.
2. Tighten clamp.
3. Slip on yoke and flare.



No. 193-FA & 195-FA FLARING TOOLS (45°)

Construction of slip-on forged steel yoke lets you flare where there is little space between nut and tube end. Easy operating hard chrome-finished flaring cone. Bar gives positive grip without marring tube.

No. 193-FA* Flaring Tool for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$ and $\frac{1}{2}$ " O.D. tubing. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ " nom.) Wt. 1½ lbs.

No. 195-FA* Flaring Tool for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. tubing. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.) Wt. 1½ lbs.

Pat. Nos. 1,724,697; 2,072,359; 2,278,932; 2,553,813
Pat. Can. 1943 and 1953. Other patents pending

*Conforms to Federal Specification GGG-F-451, 12-7-54. Type I, Class 2, Style A

No. 375-FS WIDE-RANGE FLARING KIT (45°)

No. 376-FS FLARING TOOL (45°)

Compact kit holds 2 flaring bars and one yoke for flaring 9 tube sizes. Self-centering forged steel yoke has latest slip-on feature. Positive clamping action of flaring bars eliminates tube movement.

No. 375-FS* Flaring Kit for $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. tubing. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " nom.) In metal container, Wt. 4¾ lbs.

No. 376-FS*—For $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. tubing. Wt. 2 lbs.

Pat. Nos. 2,072,359; 2,278,932; 2,553,813; 2,493,127. Pat. Can. 1943 and 1953

*Conforms to Federal Specification GGG-F-451, 12-7-54. Type I, Class 2, Style A

No. 500-FP FLARING TOOL (45° or 37°) FOR PLASTIC TUBING

Flares Nylon or Impolene (Imperial's Polypropylene) tubing for use with either 45° or 37° flare fittings. Fast acting. Makes flare to extra-wide angle, then elastic quality of plastic springs tube end to correct angle. Sliding dies for holding tubing. Cam action clamp.

No. 500-FP Flaring Tool for Plastic Tubing for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. tubing. Wt. 1¾ lbs.

Pat. Nos. 2,505,666; 2,534,510; 2,505,665
Pat. Can. 1951 and 1955. Other patents pending

No. 408-F SWEEP FLARING TOOL (45°)

Fast acting tool. Simultaneously flares and burnishes tube in two or three easy revolutions of handle. Produces perfect flares. Clamping bar also useful for holding tubing during cutting, swaging or sizing. Tool must be clamped in vise or "C" clamp while flaring.

No. 408-F Sweep Flaring Tool in steel case. For 1 3/8, 1 5/8 and 2 1/8" O.D. tube. (1 1/4, 1 1/2, 2" nom.) Wt. 7 lbs.

No. 409-F Holding Bar only. For holding tubing when cutting, swaging, sizing or flaring.

No. 410-F Handle

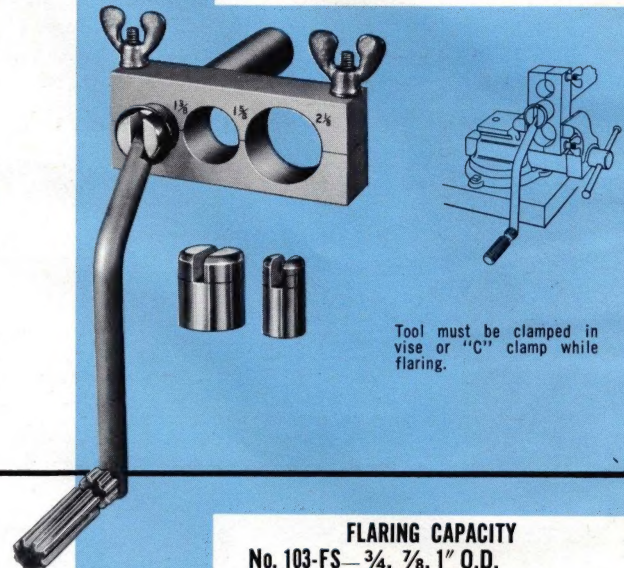
Adaptors: No. 411-F, 1 3/8"; No. 411-F, 1 5/8"; and No. 411-F, 2 1/8".

Patents pending

FLARING CAPACITY

1 3/8, 1 5/8 and 2 1/8" O.D. (1 1/4, 1 1/2 and 2" nom.)

Flares (45°) and burnishes annealed type "L" copper tubing.



Tool must be clamped in vise or "C" clamp while flaring.

No. 103-FS and 203-FA FLARING TOOLS (45°)

Flares larger tube sizes. Quick slip-on yoke. Tool chrome-finished, swivel cone reduces effort required. Bar offers positive grip without marking tubing.

No. 103-FS* Flaring Tool for sizes 3/4, 7/8 and 1" O.D. (5/8 and 3/4" nom.) Wt. 3 3/4 lbs.

No. 203-FA* Flaring Tool for sizes 5/8, 3/4, 7/8 and 1 1/8" O.D. (1/2, 5/8, 3/4 and 1" nom.) Wt. 3 3/4 lbs.

Pat. Nos. 1,724,697; 2,072,359; 2,278,932; 2,553,813. Pat. Can. 1943 and 1953.

*Conforms to Federal Specification GGG-F-451, 12-7-54. Type I, Class 2, Style A

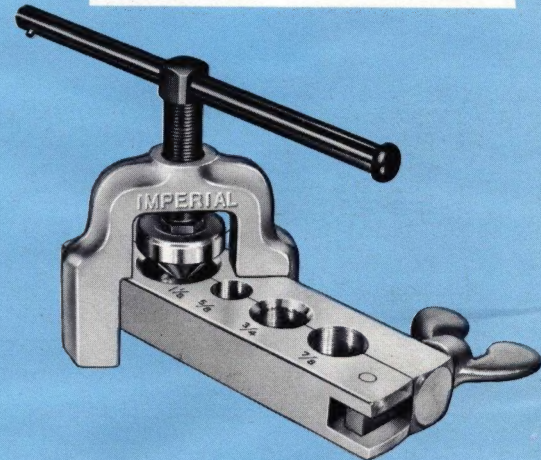
REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.

FLARING CAPACITY

No. 103-FS—3/4, 7/8, 1" O.D.
(5/8, 3/4" nom.)

No. 203-FA—5/8, 3/4, 7/8, 1 1/8" O.D.
(1/2, 5/8, 3/4, 1" nom.)

Form 45° S.A.E. flares in soft copper, aluminum and brass.



No. 296-FA FLARING TOOL (45°)

Economical, fast operating tool. Quick slip-on aluminum alloy yoke. Easy operating swivel-type, hard chrome-finished cone assures smooth flares.

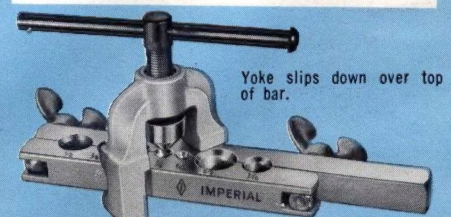
No. 296-FA Flaring Tool for 3/16, 1/4, 5/16, 3/8, 7/16, 1/2 and 5/8" O.D. (1/8, 1/4, 3/8, 1/2" nom.) Wt. 1 3/4 lbs.

Pat. Nos. 2,278,932; 2,553,813. Pat. Can. 1943 and 1953.

Conforms to Federal Specification GGG-F-451, 12-7-54. Type I, Class 2, Style A

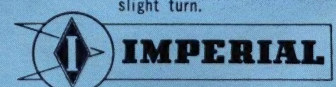
FLARING CAPACITY

3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8" O.D. (1/8, 1/4, 3/8, 1/2" nom.) Forms 45° flares in soft copper, aluminum and brass.



Yoke slips down over top of bar.

Locks into position with a slight turn.

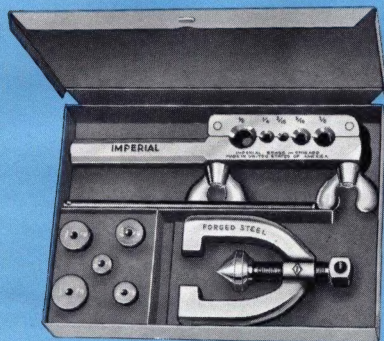


FLARING (45°)

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ " O.D.

Forms 45° double lap flares in all soft steel tubing (wall thickness to .040"). Also single or double flares in soft copper, aluminum or brass tubing.



Pat. Nos. 1,724,697; 2,072,359; 2,370,089; 2,553,813
Pat. Can. 1953. Other patents pending

No. 93-FB DOUBLE FLARING TOOL (45°)

Recommended for Bundy, GM, Avon and other brazed or welded steel tubing. Small, light weight, easy to handle. Forged steel yoke; swivel-type hard chrome-finished flaring cone. Bar provides positive grip of tubing. Tool bells tubing with adaptor (Fig. 1), then flare is completed in conventional manner (Fig. 2).

No. 93-FB Double-Flaring Tool for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ " O.D. tubing. Wt. 3 lbs. in metal kit.

Conforms to Federal Specification GGG-F-451, 12-7-54. Type I, Class 2, Style A

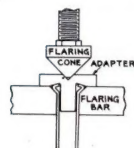


FIG. 1
Screw down flaring cone with proper size adaptor in tube.

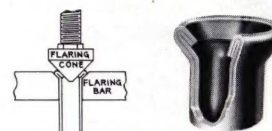
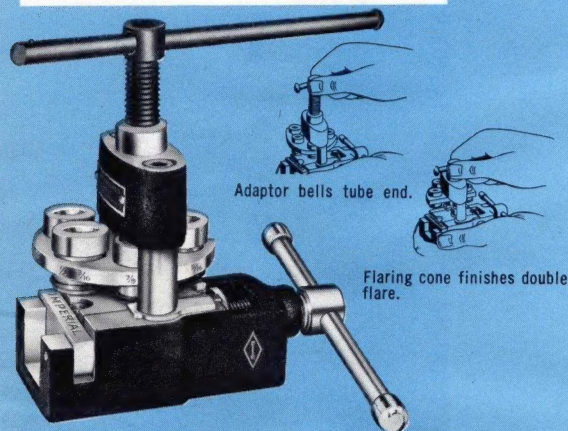


FIG. 2
Back cone off slightly, remove adaptor and complete flare in conventional manner. Ball bearing in cone reduces effort required.

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ " O.D.

Forms 45° S.A.E. double-lap flares in all soft steel tubing (wall thickness to .040"). Also single or double flares in soft copper, aluminum or brass tubing.



Adaptor bells tube end.

Flaring cone finishes double flare.

No. 251-F DOUBLE-FLARING TOOL (45°)

Bells tube then folds end down to make accurate 45° flare with double-thick walls on soft steel tubing such as Bundy, GM and Avon. Also makes single 45° S.A.E. standard and over-size flares. Adaptors revolve for quick size change and act as positioning gauge for tube. Small 2-piece die block handles all 5 sizes. Body fits snugly into palm of hand for comfortable grip; sliding handle gives maximum leverage.

No. 251-F Double-Flaring Tool for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ " O.D. tubing. Wt. 2½ lbs. Pat. Nos. 2,774,408; RE-24,325

REPLACEMENT PARTS FOR ALL IMPERIAL TOOLS
SHOWN ON PAGES 26 TO 30.

FLARING CAPACITY

$\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D.

Forms 45° double lap flares in soft copper or aluminum (wall thickness to .035").



Ball bearing in flaring cone reduces effort required.

No. 195-FB DOUBLE FLARING TOOL (45°)

Designed for automotive air conditioning service. Easy operating swivel-type hard chrome-finished flaring cone. Quick slip-on yoke. Flaring bar offers positive grip of tubing. Makes flare with double-thick, double-strength walls. (See illustrations above). Also makes single flares and over-size flares.

No. 195-FB Double-Flaring Tool for $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. tubing. Wt. 5½ lbs.

Patents on No. 93-FB apply



No. 275-FS FLARING (45°) AND SWAGING TOOL

Flares or swages. Converts quickly. Screw-type feed. Ideal close quarters tool. Two bars included cover 9 sizes. Swivel-type swaging adaptors and spreader cone are hard chrome-finished for easy operation. Self-centering, slip-on forged steel yoke.

No. 275-FS Flaring and Swaging Tool for $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " nom.) Includes 4 swage adaptors for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " O.D. ($\frac{1}{8}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " nom.) In steel kit. Wt. $3\frac{1}{2}$ lbs.

No. 276-FS Flaring Tool only. Wt. $3\frac{1}{4}$ lbs.

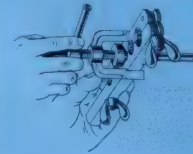
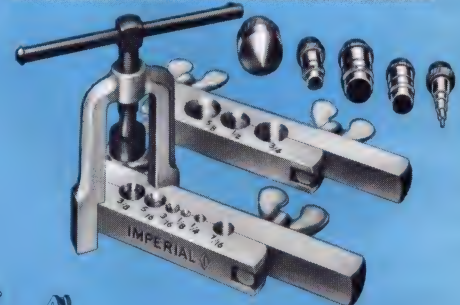
No. 278-FS—Individual adaptors. (Specify size. Small adaptor swages: $\frac{3}{16}$, $\frac{1}{4}$, $\frac{3}{8}$ " O.D. One adaptor for each other size. Wt. $\frac{3}{4}$ oz.)

Pat. Nos. 1,724,697; 2,278,932; 2,493,127; 2,553,813

CAPACITY

$\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " O.D.
($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " nom.)

Flares (45°) and swages in soft copper, aluminum or brass tubing.



Operates even in close quarters where it is impossible to use a punch type tool.

No. 555-F PRODUCTION FLARING TOOL

No. 559-S PRODUCTION SWAGING TOOL

Fast cam-lever operation. Makes flares or swages in less than 4 seconds. Portable — can be used anywhere there is a vise or bench. Change sizes quickly. Self-gauging for accurate flare size or swage depth. Positive non-slip grip on tubing. Can be adapted for making 37° flares. Flaring cones and swaging adaptors interchangeable.

No. 555-F Flaring Tool for 45° flares in $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ " nom.)

No. 557-F Flaring Tool for 37° flares in sizes shown above.

No. 559-S Swaging Tool for tubing $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ " nom.)

Flaring Cones Only

No. 70348—45° Flaring Cone

No. 70349—37° Flaring Cone

Swaging Adaptors Only

No. 560-S— $\frac{3}{16}$ " O.D. No. 560-S— $\frac{3}{8}$ " O.D.

No. 560-S— $\frac{1}{4}$ " O.D. No. 560-S— $\frac{1}{2}$ " O.D.

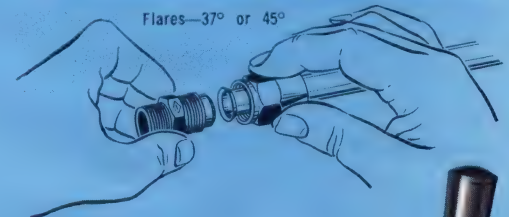
No. 560-S— $\frac{5}{16}$ " O.D. No. 560-S— $\frac{5}{8}$ " O.D.

Patents pending

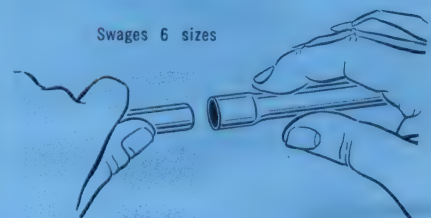
FLARING AND SWAGING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D.
($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)

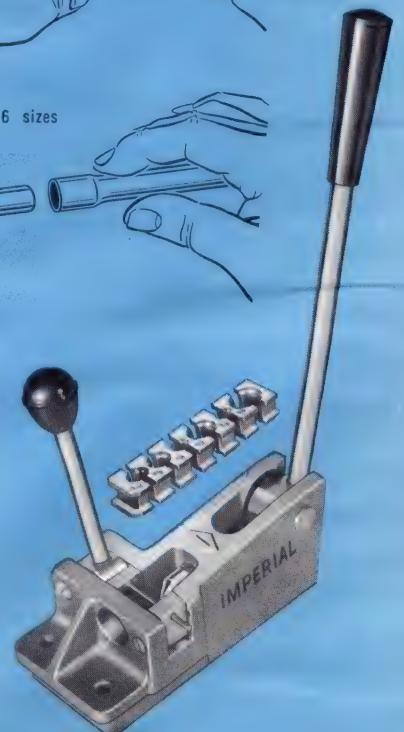
Forms 45° flares in copper, aluminum and brass. (Converts to swaging tool or 37° flaring tool for same sizes with adaptors listed.)



Flares—37° or 45°



Swages 6 sizes



FLARING (37°)

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D.

Forms 37° flares to AN Standards in steel, stainless steel (including MIL-T-6845), titanium and other metal tubing.



No. 400-F FLARING TOOL (37°)

Positive stop gauge assures correct size of flare. Special burnishing action polishes flare face. 3 rollers in flaring cone roll out 37° flare above die block. Roller action cuts effort required; maintains original wall thickness; eliminates stress concentration. Extension on yoke for clamping in vise. Furnished in steel kit.

No. 400-F Flaring Tool (37°) for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. tubing. In steel kit. Wt. 2 lbs. 9 oz.

No. 402-F Flaring and Reaming Kit. Contains No. 400-F Flaring Tool and No. 401-F Reaming Yoke for $\frac{1}{4}$ to $\frac{5}{8}$ " O.D. tubing. In steel kit. Wt. 3 $\frac{1}{8}$ lbs.

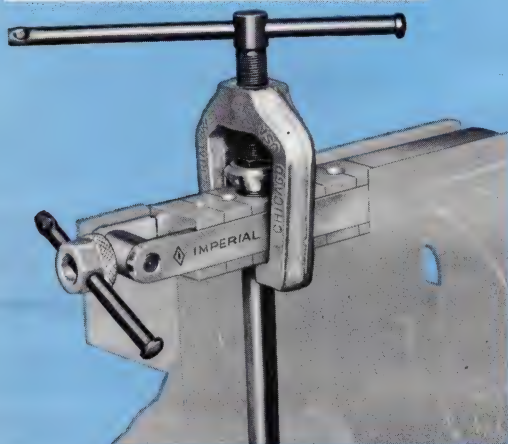
Pat. Nos. 2,505,665; 2,505,666; 2,604,139; 2,707,511; 2,709,474; 2,727,559. Pat. Canada, 1951, 1953, 1956. Other Patents Pending.

Conforms to Federal Specification GGG-F 451, 12-7-54, Type I, Class I, Style A.

FLARING CAPACITY

$\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ " O.D.

Forms 37° flares in annealed stainless steel (MIL-T-6845 or AMS5566), cold drawn stainless steel and annealed copper, brass or aluminum tubing.



NO. 447-F HEAVY DUTY FLARING TOOL (37°)

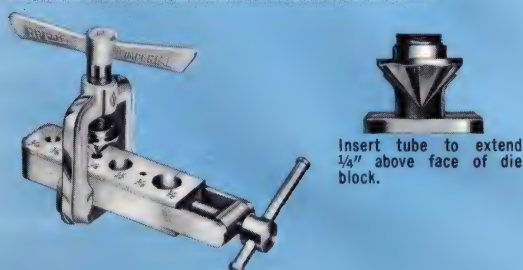
Ideal for use where considerable number of 37° flares in stainless steel tubing must be made every day. Built to withstand continuous rugged service. Ball thrust mechanism reduces effort required. Hardened tool steel die features non-slip grip of tubing, even after repetitive flaring. Bar has vise extension.

No. 447-F Heavy Duty 37° Flaring Tool for $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ " O.D. tubing.

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D.

Forms 37° flares in soft copper, aluminum and brass.



No. 507-F ROL-AIR FLARING TOOL (37°)

Faceted, hard chrome-finished cone cuts effort required. Rolls out perfect 37° flares above die block then automatically burnishes flare face. Original wall thickness maintained at base of flare. Heat-treated dies clamp tubing without scoring it.

No. 507-F Rol-Air Flaring Tool. Flares and burnishes $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{8}$ " O.D. tubing. Wt. 1 $\frac{1}{2}$ lbs.

Pat. Nos. 2,505,665; 2,893,463; 2,707,511. Pat. Can. 1953 and 1956. Other Patents Pending.

No. 437-F HI-DUTY FLARING TOOL (37°)

Hard chrome-finished cone makes exceptionally smooth flares and cuts amount of effort needed. Features positive gripping of tube and self gauging of tube for exact flare size. Sliding die blocks lock in place by lever clamp action. Chrome-nickel finish adds to tool life.

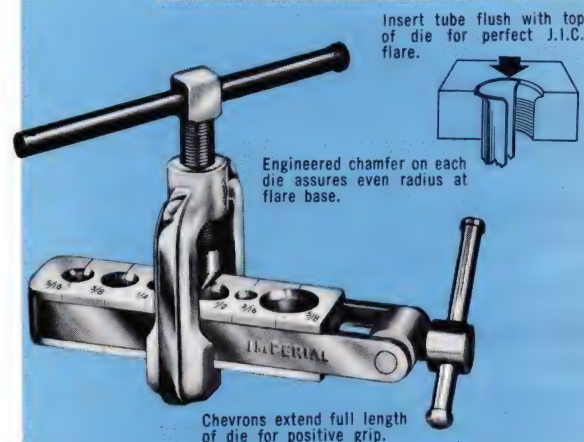
No. 437-F 37° Flaring Tool for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{8}$ " O.D. tubing. Wt. 1 lb., 11 oz.

Pat. Nos. 2,072,359; 2,505,665; 2,505,666; 2,534,510. Pat. Canada 1951. Other Patents Pending.

REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.

FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D.
Forms 37° J.I.C. flares in soft copper, aluminum and brass.



No. 537-F & 637-F FLARING TOOLS (37°)

3 cylinders in flaring cone roll out 37° flare above die block. Roller action cuts effort required; maintains original wall thickness; eliminates stress concentration. Automatic burnishing action. Vise clamp extension on yoke. Heat treated dies clamp tubing without marking it. Furnished in steel kit.

No. 537-F* Flares and burnishes $\frac{3}{4}$, $\frac{7}{8}$, 1, and $1\frac{1}{4}$ " O.D. tubing. Net wt. 5 lbs.

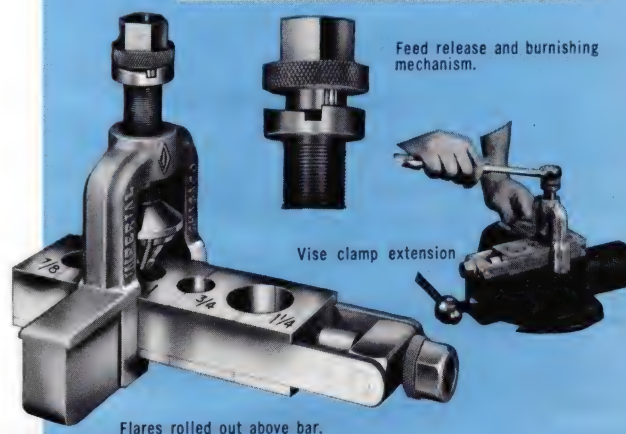
No. 637-F Flares and burnishes $1\frac{1}{4}$, $1\frac{1}{2}$ and 2" O.D. tubing. Net wt. 13 lbs.

Patent Nos. 2,505,665; 2,505,666; 2,534,510; 2,707,511. Pat. Can. 1951, 1956. Other Patents Pending.

*Conforms to Federal Specification GGG-F-451, 12-7-54. Type I, Class 1, Style B.

FLARING CAPACITY

No. 537-F— $\frac{3}{4}$, $\frac{7}{8}$, 1 and $1\frac{1}{4}$ " O.D.
No. 637-F— $1\frac{1}{4}$, $1\frac{1}{2}$ and 2" O.D.
Flare (37°) and burnish soft steel, copper, aluminum and fully annealed stainless steel.



No. 407-FA FLARING TOOL (37°)

Precision tool flares (37°) $\frac{1}{8}$ hard stainless steel and all other tubing to extremely close tolerances. Swivel-head clamp locks tubing in smooth bore die blocks. Lathe type tube feed. Flares rolled out by ball-bearing mounted flaring cone. Tool must be clamped in vise.

No. 407-FA Flaring Tool for $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, and $1\frac{1}{2}$ " O.D. tubing. In carrying case.

Squaring and Deburring Attachments

- No. 74460 Internal Deburring Tool for $\frac{1}{8}$ to $\frac{7}{16}$ " O.D.
- No. 74455 Internal Deburring Tool for $\frac{1}{2}$ to $1\frac{1}{2}$ " O.D.
- No. 74447 External Deburring Tool
- No. 74462 Facing Tool

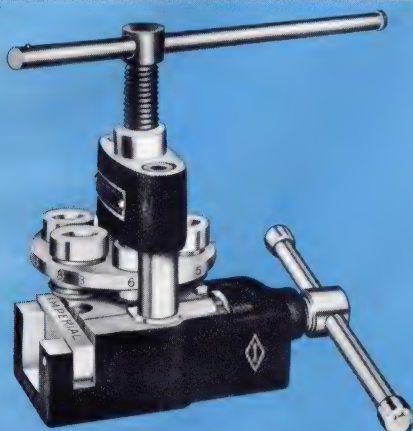
Flares (37°) $\frac{1}{8}$ hard stainless steel (MIL-T-6845) and all other tubing to Military Standard MS 33584.



FLARING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ " O.D.

Forms 37° double lap flares to AN Standard AND10078 in soft copper and aluminum (wall thickness to .040"). Also single or double flares soft copper, aluminum or brass.



TOOL CAPACITY

$\frac{1}{4}$ to $\frac{5}{8}$ " O.D.

Removes inner burrs from all metal tubing including steel and stainless steel.



Feed screw feeds reamer into tube.

REAMING CAPACITY

$\frac{3}{16}$ to $1\frac{1}{2}$ " O.D. ($\frac{1}{8}$ to $1\frac{1}{4}$ " nom.)

No. 208-F Reams copper, aluminum, brass and other tubing.

No. 208-FSS Reams aircraft grade stainless steel tubing; hard or soft copper, aluminum, brass and steel tubing.



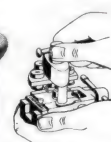
No. 256-F DOUBLE-FLARING TOOL

Bells tube then folds end down to make precision 37° flare with double-thick walls. Also makes single 37° S.A.E. standard and over-size flares. Adaptors revolve for quick size change and act as positioning gauge for tube. Small 2-piece die block handles all 5 sizes. Body fits snugly into palm of hand for comfortable grip; sliding handle gives maximum leverage.

No. 256-F Double-Flaring Tool for $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, and $\frac{1}{2}$ " O.D. tubing. Wt. 2½ lbs. Pat. Nos. 2,774,408; RE 24,325.



1. Adaptor bells tube end.



2. Flaring cone finishes double flare.

IMPERIAL DEBURRING TOOLS

Hardened tool steel reamer with tapered cutting edges. Sharp, precise cutting angles. Fine thread feed screw gives sensitive control. Self-centering forged steel yoke.

ORDER YOKES AND BARS SEPARATELY

Deburring and Flaring Bars Only

No. 61984 (Furnished with No. 437-F Flaring Tool). Use with No. 438-F Reamer. Wt. 15 oz.

No. 61826 Use with No. 401-F Reamer. For $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D. Tubing. Wt. 1 lb., 6 oz.

Reaming Yokes Only

No. 438-F For $\frac{1}{4}$ to $\frac{5}{8}$ " O.D. Tubing. Used on flaring bars furnished with No. 437-F, No. 500-F, No. 300-F or No. 355-F Flaring Tools. Wt. $\frac{3}{4}$ lb.

No. 401-F For $\frac{1}{4}$ to $\frac{5}{8}$ " O.D. Tubing. Use with No. 400-F Flaring Tool Bar (No. 61826). Wt. 9 oz.

Patents applied for.

REPLACEMENT PARTS FOR ALL IMPERIAL TOOLS SHOWN ON PAGES 26 TO 30.

No. 208-F INNER-OUTER REAMER

Reams both inside and outside edges of tube with 3 hollow ground tool steel cutters. Fluted body is shaped to fit comfortably in palm. No. 208-FSS has high speed steel cutters.

No. 208-F Reamer for copper, aluminum and brass tubing. Wt. 10 oz.

No. 208-FSS Reamer for aircraft grade stainless steel tubing; hard or soft copper, aluminum, brass and steel tubing. Wt. 10 oz.

Pat. No. 2,242,821.

**NEW FEATURES
ON LEVER-TYPE BENDERS**
See Inside Front Cover

No. 364-FH* LEVER-TYPE TUBE BENDERS

Each tool bends one size. Open-side type. Handy in a tight spot. Makes precision short-radius bends up to 180° with minimum effort. Keeps tube round. No marks or scrapes. Shows bend degree. Unique hook grips tubing securely.

ORDER BY CATALOG NUMBER AND TUBE SIZE
Each tool bends only one size

Catalog Number	Outside Diameter of Tubing	Nominal Size	Radius to Center of Tube	Weight Each
364-FH	1/8	—	3/8	1/2 lb.
364-FH	3/16	—	7/16	9 oz.
364-FH	1/4	1/8	9/16	3/4 lb.
364-FH	5/16	—	1 1/16	1 1/4 lbs.
364-FH	3/8	1/4	1 5/16	1 3/4 lbs.
364-FH	7/16	—	1 1/2	3 1/2 lbs.
364-FH	1/2	3/8	1 1/2	3 1/2 lbs.
364-FH	5/8	1/2	2 1/4	10 lbs.
364-FH	3/4	5/8	3	10 1/2 lbs.
364-FH	7/8	3/4	3	10 1/2 lbs.

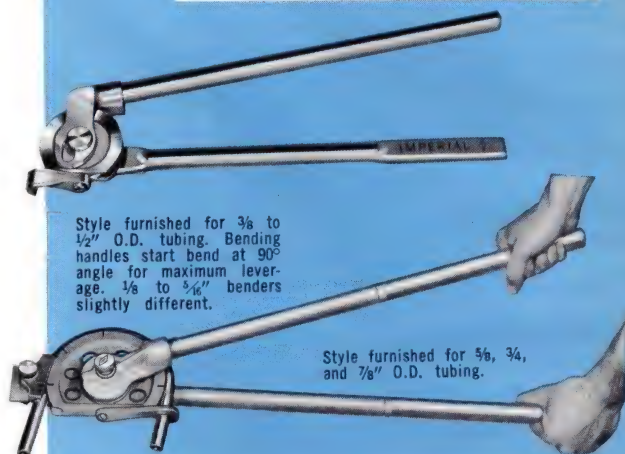
Pat. Nos. 2,796,785; 2,464,800; 2,171,907

*Conforms to Federal Specification GGG-B-191, 11-18-55. Type III, Class 2.

BENDING

BENDING CAPACITY

Individual tools for 10 sizes from 1/8 to 7/8" O.D. (1/8 to 3/4" nom.) See list. Bend hard drawn copper, steel (including I.I.C.), stainless steel and all soft tubing.



No. 270-F* GEAR-TYPE TUBE BENDERS

For all bending work. Spur-gear type with 10-to-1 ratio for easy bending of all tubing.† Floating shoe aligns tube perfectly on calibrated forming wheel. Pull-pin on wheel speeds repositioning for bends over 90°. Portable. Can be hand held, clamped in vise or bolted to bench. Adapts to pipe vise with extension handle No. 271-F.

ORDER BY CATALOG NUMBER AND O.D. SIZE
Each bender handles only one size

Catalog No.	O.D. Size	Nom. Size	Bending Radius to Center of Tube	Minimum Return from Center to Center of Tubing	Weight Each in Lbs.
270-F	3/8	1/4	1 3/4	4 1/2	3
270-F	1/2	3/8	2 1/2	6	4 3/4
270-F	5/8	1/2	3	7 1/2	8 1/2
270-F	3/4	5/8	4	9 1/2	15
270-F	7/8	3/4	4	9 1/2	14 3/4
270-F	1	—	4	9 1/2	14 3/4
270-F	1 1/8	1	4	9 1/2	14 1/4

No. 271-F Extension Handle. Fits all No. 270-F Benders. Wt. 1 3/4 lbs. For use when clamping bender in pipe vise.

*Conforms to Federal Specification GGG-B-191, 11-18-55. Type II, Class 2.

BENDING CAPACITY

Individual tools for 3/8, 1/2, 5/8, 3/4, 7/8, 1 and 1 1/8" O.D.

(1/4, 3/8, 1/2, 5/8, 3/4, 1" nom.)

Bend all metal tubing†—hard or soft temper. Forms 90° bends in single operation; 180° bends in two-step operation.



No. 366-FR RATCHET HANDLE

Used in place of handle supplied with lever-type benders for 5/8" O.D. (1/2" nom.) and larger. Lets you make bends on hard tubing with minimum effort, even in close quarters. As little as 30° handle movement gives new grip so you maintain maximum leverage throughout bend. Ratchet reversing mechanism. Bends made with equal ease from either direction.

No. 366-FR Ratchet Handle for all Imperial lever-type benders, sizes 5/8, 3/4 and 7/8" O.D. (1/2, 5/8, 3/4" nom.)

Patents pending.

Can be used with all Imperial lever-type benders, sizes 5/8, 3/4 and 7/8" O.D. (1/2, 5/8, 3/4" nom.) (250-FH, 350-FH, 360-FH, 361-FH, 362-FH, 363-FH, 364-FH and 365-FH.)

Ratchet feature lets you maintain maximum leverage throughout bend.



BENDING

BENDING CAPACITY

260-FH—7 sizes from 1/4 to 7/8" O.D.

(1/8 to 3/4" nom.)

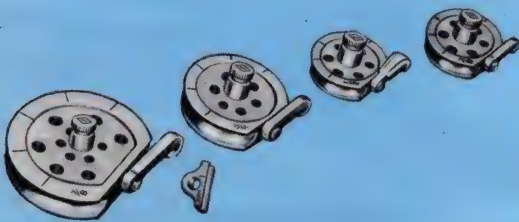
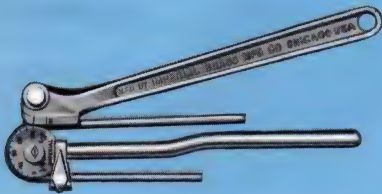
350-FH—6 sizes from 1/4 to 3/4" O.D.

(1/8 to 5/8" nom.)

360-FH—4 sizes from 3/8 to 3/4" O.D.

(1/4 to 3/4" nom.)

Bend hard drawn copper, steel (including JIC), stainless steel and all soft tubing.



BENDING CAPACITY

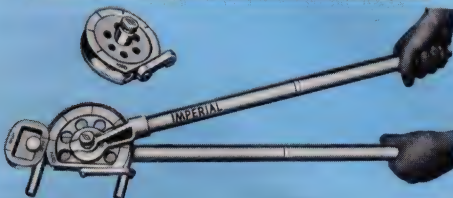
361-FH—5/8, 7/8" O.D. (1/2, 3/4" nom.)

362-FH—1/2, 5/8" O.D. (3/8, 1/2" nom.)

363-FH—3/4, 7/8" O.D. (5/8, 3/4" nom.)

365-FH—5/8, 3/4" O.D. (1/2, 5/8" nom.)

Bend hard drawn copper, steel (including J.I.C.), stainless steel and all soft tubing.



WIDE RANGE LEVER-TYPE TUBE BENDERS

Each tool swiftly adapts to all sizes in its range by changing forming wheel and block. Long handles reposition during bend for best leverage. Also operates with Ratchet Handle No. 366-FR (page 15), which makes bends on hard tubing with less effort, even in tight quarters. Calibrations show precise bend angle. One piece benders furnished for 1/4 and 5/16" O.D. sizes. Furnished in steel carrying chest with space for other tools needed on the job.

WIDE RANGE BENDERS

No. 260-FH for 7 sizes shown below. Wt. 23 lbs.

O.D. Size	Nom. Size	Radius to Cen. of Tube
1/4	1/8	3/16
5/16	—	1 1/16
3/8	1/4	1 3/8
1/2	3/8	1 3/8
5/8	1/2	2 1/4
3/4	5/8	3
7/8	3/4	3

No. 350-FH for 6 sizes below. Wt. 20 lbs.

O.D. Size	Nom. Size	Radius to Cen. of Tube
1/4	1/8	3/16
5/16	—	1 1/16
3/8	1/4	1 3/8
1/2	3/8	1 3/8
5/8	1/2	2 1/4
3/4	5/8	3

No. 360-FH for 4 sizes below. Wt. 20 lbs.

O.D. Size	Nom. Size	Radius to Cen. of Tube
3/8	1/4	1 3/8
1/2	3/8	1 3/8
5/8	1/2	2 1/4
3/4	5/8	3



All wide range benders furnished in steel carrying chest with space for other tools.

Pat. Nos. 2,887,917; RE 24,449.

*Conforms to Federal Specification GGG-B-191, 11-18-55. Type III, Class 1.

REPLACEMENT PARTS FOR ALL IMPERIAL TOOLS SHOWN ON PAGES 26 TO 30.

TWO-IN-ONE TUBE BENDERS

Each tool adapts swiftly to two sizes by changing forming wheel and block. Bends any angle to 180°. Long handles reposition during bend for best leverage. Calibrations show precise bend angle.

Each Bender Handles Two Tube Sizes as Shown

No. 361-FH.* Wt. 10 lbs.

O.D. Size	Nom. Size	Radius to Tube Cen.
5/8	1/2	2 1/4
7/8	3/4	3

No. 362-FH.* Wt. 9 1/4 lbs.

O.D. Size	Nom. Size	Radius to Tube Cen.
1/2	3/8	1 3/8
5/8	1/2	2 1/4

No. 363-FH.* Wt. 11 lbs.

O.D. Size	Nom. Size	Radius to Tube Cen.
3/4	5/8	3
7/8	3/4	3

No. 365-FH.* Wt. 10 lbs.

O.D. Size	Nom. Size	Radius to Tube Cen.
5/8	1/2	2 1/4
3/4	5/8	3

Pat. Nos. 2,887,917; RE 24,449

*Conforms to Federal Specification GGG-B-191, 11-18-55. Type III, Class 1.

No. 600-F WORM-GEAR TUBE BENDER

Precision tool for highest quality work. Worm-gear type with 50-to-1 ratio and crank with revolving hand grip. Keeps effort at minimum. Follow bar eliminates drawing action and keeps tube in virtually perfect round. Adjustable pressure roller positions quickly in index holes. Enclosed gears. Pull out center pin and wheel to change sizes. Furnished in steel carrying case

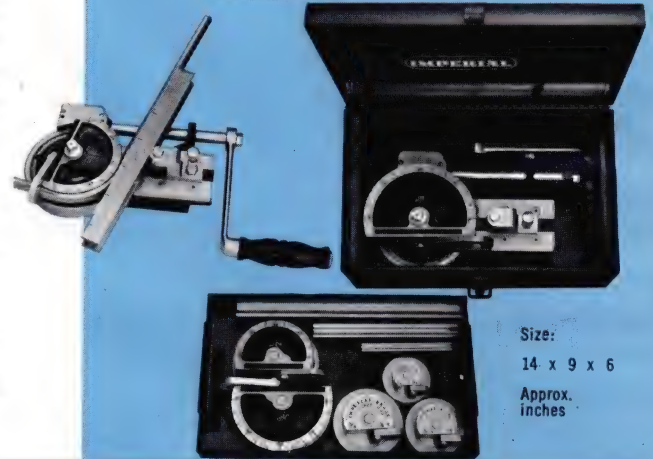
No. 600-F Worm-Gear Bender for $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. tubing. Wt. (in case) 35 lbs.

Radii of Bends

O.D. of Tube	Radius to Center of Tube	O.D. of Tube	Radius to Center of Tube
$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	2
$\frac{5}{16}$	1	$\frac{5}{8}$	$2\frac{1}{2}$
$\frac{3}{8}$	$1\frac{1}{4}$	$\frac{3}{4}$	3

Pat. No. 2,762,415; RE 24,449.

***Conforms to Federal Specification GGG-B-191, 11-18-55. Type I.**



Size:
14 x 9 x 6
Approx.
inches

No. 102-F SPRING-TYPE TUBE BENDER (EXTERNAL)

Budget priced tools for hand bending soft tubing to any shape. Keeps tube in perfect round. Special spring steel, nickel finished. End belled for quick tube removal.

**No. 102-F INDIVIDUAL BENDERS
Order by Catalog Number and Tube O.D. Size**

Size	Length	Weight	Size	Length	Weight
$\frac{1}{4}$	10	3 oz.	$\frac{3}{16}$	12	$6\frac{1}{4}$ oz.
$\frac{5}{16}$	10	3 oz.	$\frac{1}{2}$	12	$6\frac{1}{2}$ oz.
$\frac{3}{8}$	10	4 oz.	$\frac{5}{8}$	12	8 oz.

No. 101-F—All 6 Benders.

No. 163-F—All 4 Benders ($\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D.).

No. 112-F—All 3 Benders ($\frac{1}{4}$, $\frac{5}{16}$ and $\frac{3}{8}$ " O.D.).

***Conforms to Federal Specification GGG-B-191, 11-18-55. Type IV.**



Bends tube without collapsing walls

No. 302-F SPRING-TYPE TUBE BENDER (INTERNAL)

Insert spring in tube and hand bend to any shape. Keeps tube in perfect round. Length of spring (6 feet) lets you make bends up to 5 feet from tube end.

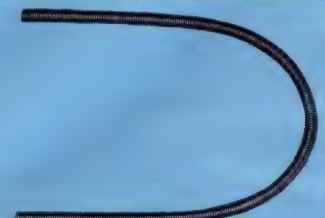
Order by Catalog Number and O.D. Size

Catalog Number	O.D. Size	Nom. Size	Weight Each
302-F	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{2}$ lb.
302-F	$\frac{1}{2}$	$\frac{3}{8}$	1 lb.
302-F	$\frac{5}{8}$	$\frac{1}{2}$	$1\frac{7}{8}$ lbs.

BENDING CAPACITY

Individual springs for $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D.
($\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)

Bends copper, aluminum and other soft, thin-wall tubing.

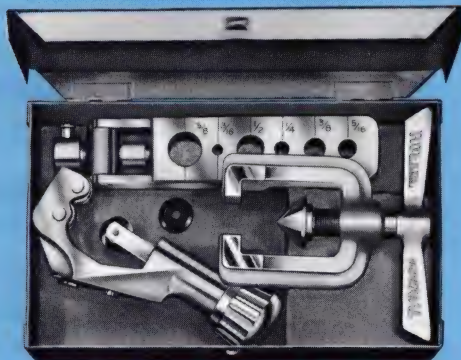


KITS

FLARING AND CUTTING CAPACITY

$\frac{3}{16}$ to $\frac{5}{8}$ " O.D. ($\frac{1}{8}$ to $\frac{1}{2}$ " nom.)

Forms 45° S.A.E. flares in soft copper, aluminum and brass. See Flaring Range For Each Kit. Cuts all tubing $\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. ($\frac{1}{8}$ to 1" nom.)



No. 124-F Flaring and Cutting Kit

OPTIONAL—CHOOSE YOUR CONTENTS

Your Imperial Distributor will be glad to substitute other Imperial Tools for any of those listed in these kits. Ask him about this plan.



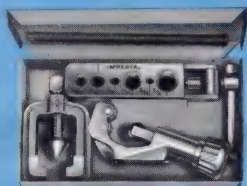
Size: 21 x 7½ x 7¼".
Wt.: 19½ lbs.

No. 391-F Tubing Tool Kit.

FLARING AND CUTTING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D.

Forms 37° flares in soft steel, copper, aluminum and brass tubing. Cuts from $\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. ($\frac{1}{8}$ to 1" nom.)



FLARING AND CUTTING KITS (45°)

All kits contain No. 274-FA Tube Cutter (page 4) for $\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. tubing. Flaring tools included as listed. In steel case.

Catalog No.	Tube Cutter	Flaring Tool	Range of Flaring Tool	Features of Flaring Tool
1225-F	274-FA	193-FA	$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ " nom.)	2 wing nut clamps on split die bar. Quick slip-on yokes.
1226-F	274-FA	195-FA	$\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)	Same as above.
123-F	274-FA	300-F	$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)	Sliding die bars. Single cam action clamp.
124-F	274-FA	500-F	Same as above	Same as above plus automatic burnishing action. Flares rolled out above die block.

No. 391-F INSTRUMENTATION TUBING TOOL KIT

Includes all most popular tubing tools for instrumentation installation service. Furnished in tool box with two trays, snap lock and key. 12 adjustable dividers. Plenty of room for other tools. Complete outfit priced at cost of tools alone—tool box included No Charge.

No. 391-F Tubing Tool Kit Contains:

- *1 No. 274-FA Hi-Duty Cutter (For $\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. tubing).
- *1 No. 500-F Rol-Air Flaring Tool ($\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{8}$ " O.D.).
- 1 No. 364-FH $\frac{1}{4}$ " O.D. Tube Bender
- 1 No. 364-FH $\frac{3}{8}$ " O.D. Tube Bender
- 1 No. 364-FH $\frac{1}{2}$ " O.D. Tube Bender
- 1 No. 208-F Inner and Outer Reamer
- 1 No. 140-F $\frac{1}{4}$ " O.D. Test Plug
- 1 No. 140-F $\frac{3}{8}$ " O.D. Test Plug
- 1 No. 140-F $\frac{1}{2}$ " O.D. Test Plug
- 1 No. 93-S $\frac{1}{4}$ " O.D. Swaging Tool
- 1 No. 93-S $\frac{3}{8}$ " O.D. Swaging Tool
- 1 No. 93-S $\frac{1}{2}$ " O.D. Swaging Tool

* No. 394-F Tubing Tool Kit for construction contractors and fleets. Kit includes items marked with asterisk above plus No. 360-FH Combination Blue Dot Tube Bender for $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. tubing.

No. 122-F CUTTING AND FLARING KITS (37°)

Kit contains No. 437-F Flaring Tool (page 13) and the No. 274-FA Tube Cutter (page 4) with fold-away reamer and spare wheel. In steel carrying case.

No. 122-F Flaring and Cutting Outfit. Wt. 2¾ lbs.

REPLACEMENT PARTS FOR ALL IMPERIAL TOOLS SHOWN ON PAGES 26 TO 30.

No. 120-F WIDE-RANGE CUTTING AND FLARING KIT (45°)

No. 121-F ALL-PURPOSE TUBING TOOL KIT

No. 120-F contains: No. 274-FA Cutting Tool (page 4), and No. 375-FS Wide-Range Flaring Tool (page 8) for tube sizes $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{8}$ " nom.) In steel carrying case.

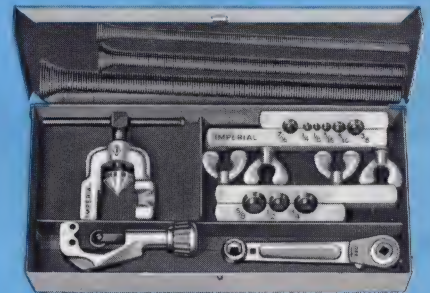
No. 121-F contains tools listed above plus three No. 102-F Bending Springs for $\frac{1}{4}$, $\frac{3}{8}$, and $\frac{1}{2}$ " O.D. tubing; and the No. 123-C Ratchet Wrench with $\frac{1}{4}$ " ratchet, $\frac{3}{16}$ and $\frac{1}{4}$ " square opening and $\frac{1}{2}$ " hex in handle. In steel carrying case.

No. 120-F Wide-Range Cutting and Flaring Kit.
Wt. $5\frac{1}{4}$ lbs.

No. 121-F All-Purpose Tubing Tool Kit. $5\frac{3}{4}$ lbs.

FLARING CAPACITY: 9 sizes from $\frac{1}{8}$ to $\frac{3}{4}$ " O.D. ($\frac{1}{8}$ to $\frac{5}{8}$ " nom.)
CUTTING CAPACITY: $\frac{1}{8}$ to $1\frac{1}{8}$ " O.D. ($\frac{1}{8}$ to 1" nom.)
BENDING CAPACITY: $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " O.D. (No. 121-F only) ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ " nom.)

For soft copper, aluminum and brass. No. 121-F also contains wrench.



No. 121-F All-Purpose Tubing Tool Kit

No. 392-F AIR CONDITIONING TUBING TOOL

Ideal kit for residential air conditioning service and installation. Contains Double Gauge Charging and Testing Unit and two Charging Hoses in addition to tubing tools. Furnished in tool box with two trays, snap lock and key. 12 adjustable dividers. Plenty of room for other tools. Tool box included No Charge.

No. 392-F Residential Air Conditioning Service and Installation Kit Contains

- | | |
|--|--|
| *1 No. 274-FA Hi-Duty Cutter
(For $\frac{1}{8}$ to $1\frac{1}{4}$ " O.D. tubing) | *1 No. 93-S $\frac{1}{2}$ " Swaging Tool |
| 1 No. 375-FS Flaring Tool
(For $\frac{1}{8}$ to $\frac{3}{4}$ " O.D.) | *1 No. 93-S $\frac{3}{8}$ " Swaging Tool |
| 1 No. 360-FH Tube Bender
(For $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " O.D.) | 1 No. 93-S $\frac{3}{4}$ " Swaging Tool |
| *1 No. 93-S $\frac{3}{8}$ " Swaging Tool | *1 No. 208-F Inner and Outer Reamer |
| | *2 No. 100-FT Charging Hoses |
| | *1 No. 352-C Charging and Testing Unit |

No. 393-F Automotive Air Conditioning Service and Installation Kit.

Contains all items marked with asterisk above plus No. 364-FH Benders for $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ " O.D. tubing and the No. 195-FB Double Flaring Tool (page 10).

OPTIONAL—CHOOSE YOUR CONTENTS
Your Imperial Wholesaler will be glad to substitute other Imperial Tools for those listed in this kit. Ask about this plan.



Size: $21 \times 7\frac{1}{2} \times 7\frac{1}{4}$ ".
Wt.: $34\frac{1}{2}$ lbs.

No. 392-F Air Conditioning Tubing Tool Kit

SWAGING

SWAGING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ " O.D.
($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " nom.)
Individual and combination punches as listed.
For aluminum, brass or copper.



To gauge tube position, insert tube through bar to top of bevel on tool.



SWAGING CAPACITY

$\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ " O.D.
($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)
Swages soft copper, aluminum and brass.
(Converts to flaring tool for 37° or 45° with flaring cones listed.)



SWAGING CAPACITY

$\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ " O.D. ($\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ " nom.)
Swages soft copper, aluminum and brass.



PUNCH-TYPE SWAGING TOOLS

Set of 4 punches only in plastic case; or set of punches with flaring bar furnished as listed below. Also single swaging tools for one size—or combination punches for 2 sizes—available as shown.

No. 193-S—Vinyl case contains 4 Swaging Punches— $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.). Wt. 1 lb.

No. 195-S—Flaring Bar and 4 Swaging Punches— $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.). In steel kit. Wt. 2 lbs.

No. 30231—Flaring Bar only. Wt. 1 lb.

INDIVIDUAL AND DUAL SWAGING TOOLS Order by Catalog Number and O.D. Size

Cat. No.	O.D. Size	Nom. Size	Weight
93-S	$\frac{3}{16}$	—	3 oz.
93-S	$\frac{1}{4}$	$\frac{1}{8}$	3 oz.
93-S	$\frac{5}{16}$	—	$\frac{1}{4}$ lb.
93-S	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{4}$ lb.
93-S	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}$ lb.
93-S	$\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{2}$ lb.
93-S	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{3}{4}$ lb.
93-S	$\frac{7}{8}$	$\frac{3}{4}$	1 lb.
94-S	$\frac{1}{2}$ & $\frac{3}{4}$	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{1}{2}$ lb.
94-S	$\frac{3}{4}$ & $\frac{7}{8}$	$\frac{5}{8}$ & $\frac{3}{4}$	1 lb.

Pat. No. 2,553,813. Pat. Can. 1953

No. 559-S PRODUCTION SWAGING TOOL

Fast cam-lever operation. Makes swage in less than 4 seconds. Converts to 37° or 45° production flaring tool with flaring cones listed. Change sizes quickly. Flaring cones and swaging adaptors interchangeable. Self-gauging for accurate swage depth or flare size.

No. 559-S Production Swaging Tool for $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ " nom.)

No. 555-F Production Flaring Tool (45°) for sizes above.

No. 557-F Production Flaring Tool (37°) for sizes above.

Flaring Cones Only

No. 70348—45° Flaring Cone No. 70349—37° Flaring Cone

Swaging Adaptors

No. 560-S $\frac{3}{16}$ " O.D.
No. 560-S $\frac{1}{4}$ " O.D.
No. 560-S $\frac{5}{16}$ " O.D.

No. 560-S $\frac{3}{8}$ " O.D.
No. 560-S $\frac{1}{2}$ " O.D.
No. 560-S $\frac{5}{8}$ " O.D.

Patents Pending.

No. 194-S SWAGING TOOL

Screw-type swaging tool for 3 popular plumbing sizes. Far easier to work with in close quarters than hammer type tools. No punch to drop, no chance of doing a poor job. Perfect swage alignment of tube every time. Adaptors change quickly.

No. 194-S Swaging Tool for $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ " O.D. ($\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ " nom.) Wt. 2 $\frac{1}{8}$ lbs.

Extra Parts

No. 278-FS—Individual Adaptors No. 69947—Bar Assembly
(Specify size) No. 38593—Yoke Assembly

No. 38600—Flaring Cone
Pat. Nos. 1,724,697; 2,072,359; 2,278,932; 2,493,127; 2,553,813
Pat. Can. 1943 and 1953. Other Patents Pending.

ALSO SEE No. 275-FS FLARING AND SWAGING TOOL,
PAGE 11 AND No. 403-S SWAGING TOOL, PAGE 31.

No. 414-S SIZING TOOLS

Impact-type tool for re-rounding tubing when flaring or making sweat-type joints. Also needed before flaring collapsed or out-of-round tubing. Made of case-hardened carbon steel. Knurled gripping surface.

Order by Catalog Number, Type of Tube and O.D. Size

No. 414-SK Sizing Tools for Type K Tubing

O.D. Size	Nom. Size	Weight in Lbs.	O.D. Size	Nom. Size	Weight in Lbs.
1/2	3/8	.12	1 1/8	1	.87
3/4	1/2	.20	1 3/8	1 1/4	1.25
7/8	5/8	.30	1 5/8	1 1/2	2.19
	3/4	.54	2 1/8	2	4.00

No. 414-SL Sizing Tools for Type L Tubing

O.D. Size	Nom. Size	Weight in Lbs.	O.D. Size	Nom. Size	Weight in Lbs.
1/2	3/8	.12	1 1/8	1	.94
3/4	1/2	.20	1 3/8	1 1/4	1.32
7/8	5/8	.30	1 5/8	1 1/2	2.31
	3/4	.54	2 1/8	2	4.20



SIZING CAPACITY

Individual tools for each of 8 sizes to 2 1/8" O.D. (2" nom.) See list below. For rerounding type "K" and "L" tubing.

No. 345-F (45°) No. 337-F (37°) REFACING TOOL

Makes nicked or marred seats on fittings and valves as good as new. Precision feed. Replaceable cutter. Kit furnished in steel case.

No. 345-F—45° Refacing Tool (with cutter and adapters for 1/4, 5/16, 3/8, 1/2, and 5/8" fittings). In steel case. Wt. 2 lbs.

No. 337-F—37° Refacing Tool. Contains 2 cutters and adapters in sizes above. In steel case.

REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.

REFACING CAPACITY

1/4, 5/16, 3/8, 1/2 and 5/8" O.D.
For refacing damaged male flare seats on fittings and valves.



No. 105-FF PINCH-OFF TOOL

Temporarily closes tubing so no liquid or gas passes sealed part. Lets you disconnect line while making repairs without loss of liquid or gas. Also opens tubing and rounds it back to shape.

No. 105-FF Pinch-Off Tool for 1/4, 5/16, 3/8 and 1/2" O.D.
Wt. 3/4 lbs.

CAPACITY

1/4, 5/16, 3/8 and 1/2" O.D.
For copper, brass, aluminum and soft steel tubing.



CAPACITY

Individual caps for $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ " O.D.
($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ " nom.)



No. 240-F TUBING TEST CAPS

For shutting off tube ends temporarily without pinching off or installing a valve. Used for working pressures to 100 psi. No need to deburr tubing. Can be used even when tube surface is rough. Also, wall thickness of tube is unimportant. Place cap over tube end and tighten wing nut. Synthetic rubber seal of cap grips outside of tube.

Order by Catalog Number and O.D. Size.

Cat. No.	O.D. of Tube	Nominal Size
240-F	$\frac{1}{4}$	$\frac{1}{8}$
240-F	$\frac{5}{16}$	—
240-F	$\frac{3}{8}$	$\frac{1}{4}$
240-F	$\frac{1}{2}$	$\frac{3}{8}$

CAPACITY

Individual plugs for $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, $1\frac{1}{8}$, $1\frac{3}{8}$, $1\frac{5}{8}$ " O.D. ($\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, 1 , $1\frac{1}{4}$, $1\frac{1}{2}$ " nom.)



No. 140-F TUBING TEST PLUGS

For temporary shut-off of tubing without pinching it off or installing a valve. Especially handy for plumbing, heating, refrigeration and instrumentation when trouble shooting for leaks. Light weight, fast acting, dependable. Insert plug in tube end and tighten wing nut. Synthetic rubber expander seals tube and holds pressures to 100 psi.

Order by Catalog Number and O.D. Size.

Cat. No.	O.D. Size	Nom. Size	Cat. No.	O.D. Size	Nom. Size
140-F	$\frac{1}{4}$	$\frac{1}{8}$	140-F	$\frac{3}{8}$	$\frac{3}{4}$
140-F	$\frac{3}{8}$	$\frac{1}{4}$	140-F	$1\frac{1}{8}$	1
140-F	$\frac{1}{2}$	$\frac{3}{8}$	140-F	$1\frac{3}{8}$	$1\frac{1}{4}$
140-F	$\frac{5}{8}$	$\frac{1}{2}$	140-F	$1\frac{5}{8}$	$1\frac{1}{2}$
140-F	$\frac{3}{4}$	$\frac{5}{8}$			

CAPACITY

Contains test plugs for $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{7}{8}$ " O.D.
($\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ " nom.)



No. 142-F TEST PLUG KIT

Handy transparent plastic case contains the three most popular test plug sizes for plumbing, heating and other applications.

No. 142-F Test Plug Kit for sizes $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{7}{8}$ " O.D.
($\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ " nom.) In plastic case. Wt. 9 oz.

No. 48-A FLATER-BLOWER

It blows, it inflates. One nozzle; one air line. Ordinary air chucks just can't deliver the same big volume. Touch the button, a powerful air stream cleans up chips, dirt, fuel-line plug-ups. No tips to change—no second air hose needed. Spring-loaded packing. Synthetic oil proof gasket. Positive shut-off. ¼" female P.T. Connection.

No. 48-A Flater-Blower. Wt. 6 oz.

Extra Parts

No. 69067 Nozzle Tip.

No. 140-C Nipple. For providing ¼" P.T. at inlet.

No. 39035 Seat Washer.

CAPACITY

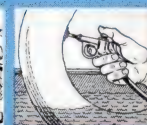
Multi-purpose air nozzle. Inflates tires, tubes, valve equipment. Also blows away chips, dirt, moisture; clears fuel-line plug ups, etc.



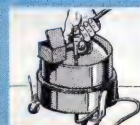
USE IT FOR:



BLOWING



INFLATING



FILLING

No. 47-A AIR NOZZLE

Handy button-control nozzles with spring loaded packing and seat at stem end. Cuts air loss. Fits comfortably in palm. Oil-proof synthetic rubber washer. Replaceable with Schrader air chuck washer. ¼" Female P.T. Connection.

No. 47-A Air Nozzle. For blowing only. Wt. 6 oz.

REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.

AIR NOZZLE

Blows away chips, dirt, moisture; clears fuel-line plug ups, etc.



No. 37-CA ENGINE AND MACHINERY CLEANER

Balanced design; comfortable grip. Body weighs less than your telephone receiver. Aluminum alloy construction. Thumb-button controls air; needle valve regulates solvent flow. Shut off solvent and use blower for dusting or drying. Long-wearing, bright nickel finish. Light weight, pliable Tygon tubing carries solvent.

No. 37-CA Machinery Cleaner including parts and 6-Ft. length of Tygon hose. Wt. 1½ lbs.

Extra Parts

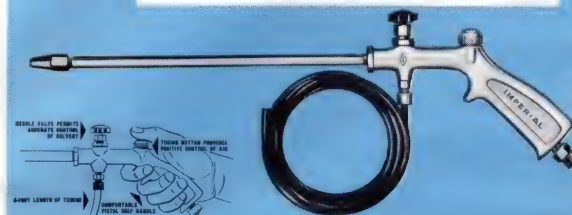
No. 64201 Tygon Tubing (6 Ft. length) with connection.

No. 27174 Flexible Metal Hose Assembly with connection (6 Ft. length).

No. 39035 Air Valve Seat Washer.

ENGINE AND MACHINERY CLEANER

Cleans with powerful spray of solvent and compressed air. Also use as blower.



SERVICE AIDS

HEAVY DUTY NOZZLE

For use in machine shops, foundries, garages, repair shops—anywhere dependable, quick-acting nozzles are required.



No. 143-A HEAVY-DUTY AIR NOZZLE WITH INTERCHANGEABLE NOSES

Light weight—handy. Heat treated, Duralumin forged body. Push-button control with spring loaded packing. 4 interchangeable noses. Neoprene washer withstands oils and acids. Bright nickel finish. 1/4" female P.T. connection.

No. 143-A Body with 4 noses. Wt. 8 1/2 oz.

No. 142-A Body with general purpose nose only. Wt. 5 1/2 oz.

No. 141-A Body only. Fits all noses with 1/8" P.T. Wt. 4 1/2 oz.

EXTRA PARTS

No. 39022 General Purpose Nose. Wt. 1 oz.

No. 39023 Long Nose (10 5/8"). Can be bent for recesses. Wt. 1 1/2 oz.

No. 39026 Adjustable Nose for high pressure lines or where blast must be controlled. Wt. 1 oz.

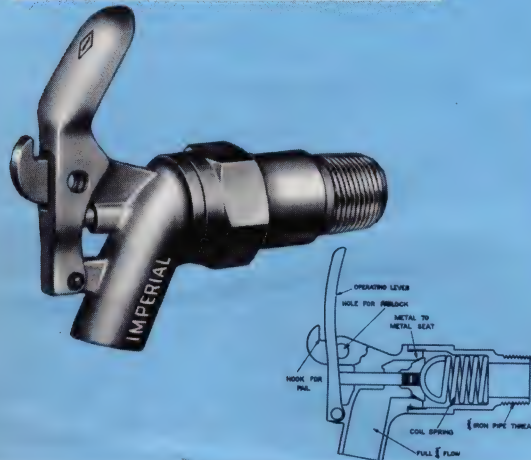
No. 39029 Wide, Flat Nose—for broad surfaces. Wt. 1/2 oz.

No. 39035 Neoprene Washer.

CAPACITY

Fits all standard drums and barrels.

For oil, gasoline, kerosene, alcohol, light varnishes, thinners, solvents and most other liquids.



No. 261-G SELF-CLOSING DRUM FAUCET

Millions in use. Durable metal-to-metal seat. No washers to wear or deteriorate and cause leakage. Fast flowing. Operates well in heat or cold. Locks open or closed. Special spring stands up longer, retains original strength. Hook for pail. No. 261-G not suitable for Methanol Antifreeze.

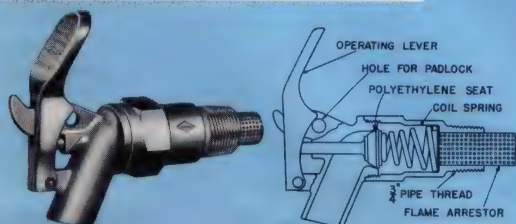
No. 261-G Self-Closing Drum Faucet. 3/4" pipe thread shank fits standard 1" opening on drums and barrels.

No. 361-G Same as above with Polyethylene seat which resists most solvents and chemicals, including Methanol Antifreeze.

REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.

FOR FLAMMABLE LIQUIDS

Approved by Factory Mutual Laboratories for dispensing free-flowing volatile flammable liquids from 55-gallon drums racked horizontally.



No. 270-G FLAME-ARREST DRUM FAUCET

Self-closing. Equipped with flame arrestor. Heavy cast bronze construction. Polyethylene seat resists most solvents and chemicals including Methanol. Fast flowing. Can't be held open mechanically. Locks closed.

No. 270-G Self-Closing Drum Faucet with Flame Arrestor. 3/4" pipe thread shank fits standard drums. Wt. 17 oz.

No. 269-G Same as above but without flame arrestor.

Approved by Factory Mutual Laboratories for dispensing viscous flammable liquids from 55-gallon drums horizontally racked.



IMPERIAL PEG-BOARD TUBING TOOL MERCHANDISERS

Practical and versatile. Select your own display items, place them where desired. Movable hooks and identification labels included. Hang on wall or order complete with easel for counter. Each board has handsome blue finish with prominent blue, orange and white sign.

No. 390-FA Automotive Tubing Tool and Service Aid Merchandiser 13 Parts

CONTENTS

227-F	Tube Cutter	48-A	Flater-Blower Air Nozzle
274-FA	Tube Cutter	208-F	Reamer
300-F	Flaring Tool	364-FH	3/8" Tube Bender
193-FA	Flaring Tool	102-F	1/4" Tube Bender
93-FB	Double Flaring Tool	37-CA	Engine Cleaner
1225-F	Flaring and Cutting Kit	261-G	Drum Faucet
199-F	3/16 Ratchet Wrench		

No. 383-FA Plumbing Tubing Tool Merchandiser. 15 Parts.

CONTENTS

406-F	2-to-4 Tube Cutter	364-FH	3/8" O.D. Tube Bender
206-F	Adjust-O-Matic Tube Cutter	270-F	1/2" O.D. Tube Bender
274-FA	Hi-Duty Tube Cutter	194-S	Swaging Tool (Furnished in Kit)
227-F	Tube Cutter	93-S	3/8" O.D. Swaging Tool
500-F	Roll-Air Flaring Tool	414-SK	1 1/8" O.D. Sizing Tool
296-FA	Flaring Tool	142-F	Test Plug Kit
203-FA	Flaring Tool	208-F	Inner and Outer Reamer
124-F	Flaring and Cutting Kit		

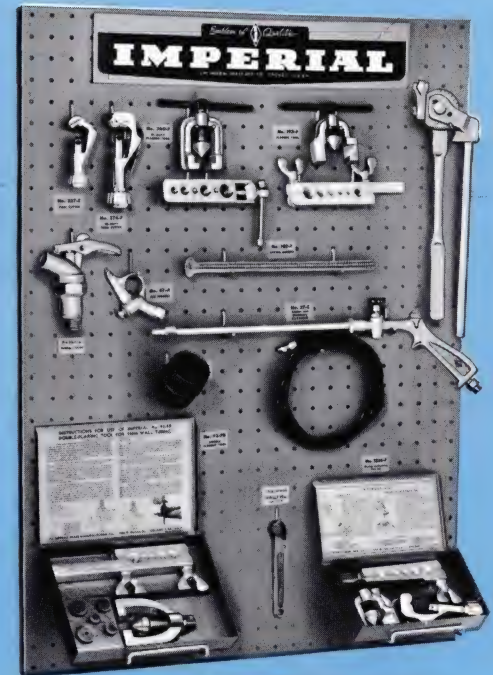
No. 381-FA Refrigeration or Industrial Tubing Tool Merchandiser. 15 Parts. (not illustrated)

CONTENTS

227-F	Tube Cutter	364-FH	1/2" Tube Bender
274-FA	Tube Cutter	102-F	3/8" Tube Bender
312-FA	Tube Cutter	270-F	3/8" Tube Bender
206-F	Tube Cutter	375-FS	Flaring Tool Kit
500-F	Flaring Tool	195-FA	Flaring Tool
140-F	3/8" Test Plug	203-FS	Flaring Tool
208-F	Inner & Outer Reamer	93-S	3/8" Swaging Tool
364-FH	3/8" Tube Bender		

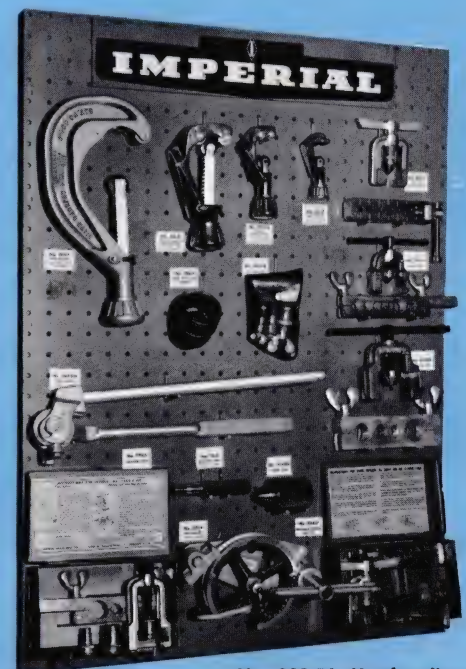
**REPLACEMENT PARTS FOR ALL IMPERIAL
TOOLS SHOWN ON PAGES 26 TO 30.**

NO CHARGE FOR PEG-BOARDS when ordered with suggested stock or equivalent.



No. 390-FA Merchandiser

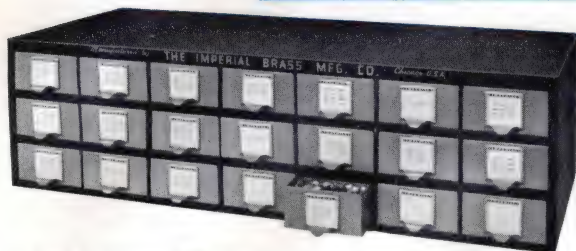
Size of Boards:
23 3/4" x 31 3/4"



No. 383-FA Merchandiser

TOOL PARTS

**STOCK HANDLES
OVER 85% OF ALL
REPLACEMENT REQUESTS**



Size of Cabinet: 34" wide
x 9 3/8" high x 11 7/8" deep

No. 143-F TOOL PARTS KIT

This 21-drawer steel cabinet holds supply of 47 different replacement parts for commonly used Imperial tubing tools and service aids — tube cutters, benders, flaring tools, sawing vises, swaging tools, air nozzles and machinery cleaners.

Drawer contents clearly marked for quick identification. 8-page Tool Parts Book (Form 10,776-E) comes with kit. Shows all replacement parts for current Imperial tools and service aids. Five pages of blueprint drawings simplify identification of parts to be replaced. Offers convenient stocking and simplifies reordering.

CONTENTS OF 143-F REPLACEMENT PARTS KIT

QUANTITY	PART NO.	DESCRIPTION	TOOLS ON WHICH PART IS USED
2	24605	Inner Pipe	37-C, 37-CA
1	24607	Tube Guide	37-CA
2	25384	Compressor Cone	93-F, 95-F, 193-F, 195-F
10	26883	Screw for Cutting Wheel	94-F, 104-F, 127-F, 174-F
			212-F, 227-F, 274-F
20	32633	Cutting Wheel	94-F, 104-F, 127-F, 174-F
			212-F, 227-F, 274-F, 374-F
1	32640	Compressor Cone	93-FB, 375-FS, 376-FS
1	36926	Nozzle	47-A
5	38388	3/16" Adapter	93-FB
6	38584	Wing Nut	93-F, 93-FS, 93-FB, 95-F
			95-FS, 175-F, 193-F, 193-FS
			195-F, 195-FS, 275-FS, 276-FS
			375-FS, 193-FA, 195-FA
2	38600	Compressor Cone	275-FS, 276-FS
1	38904	Compressor Cone	103-FS, 203-FS
1	39022	Intermediate Nozzle	143-A
1	39023	Long Nozzle	143-A
1	39026	Short Nozzle	143-A
1	39029	Flat Nozzle	143-A
3	39030	Valve Assembly	37-CA, 47-A, 48-A, 141-A
			142-A, 143-A
5	60225	Reamer Blade	274-F, 312-F, 374-F,
			274-FA, 374-FA
20	60232	Washer for Reamer Blade or Gauge	274-F, 274-FA, 374-F,
			374-FA, 400-F
10	60233	Screw for Reamer Blade	274-F, 274-FA, 374-F
			374-FA, 400-F
20	60769	Gauge Retaining Screw	312-F, 274-FA, 374-FA
5	61818	Cutting Wheel	400-F
5	61825	Gauge, Wishbone	400-F
		Drive Nut Retaining Screw	400-F

QUANTITY	PART NO.	DESCRIPTION	TOOLS ON WHICH PART IS USED
5	61936	Screw for Cutting Wheel	206-F
6	61952	Rollers for Flaring Cone	537-F
2	63587	Die Blocks (Set)	251-F
5	64201	Tube Assembly	37-CA
6	64227	Rollers for Flaring Cone	637-F
5	66418	Constricting Roller	374-F, 374-FA
5	66914	Hook Retaining Screw	364-FH
5	68012	1/4" Adapter	93-FB, 195-FB
5	68013	5/16" Adapter	93-FB, 195-FB
5	68014	3/8" Adapter	93-FB, 195-FB
5	68015	1/2" Adapter	93-FB, 195-FB
5	68016	5/8" Adapter	195-FB
5	68017	3/4" Adapter	195-FB
5	68050	Drive Nut Retaining Spring	400-F
5	68146	Roller Retaining Cap	400-F
5	68257	Cutting Wheel	227-FP
5	68258	Screw for Cutting Wheel	227-FP
2	68528	Nozzle Assembly	37-CA
3	68559	Stem Assembly	37-CA
2	69064	Flaring Cone	400-F
21	69065	Flaring Cone Rollers	400-F
10	69067	Nozzle Assembly	48-A
10	69516	Screw for Cutting Wheel	274-FA, 374-FA
3	70120	Cutting Wheel	204-F, 206-F
2	73611	Hose Connection	37-CA

IMPERIAL TOOL PARTS LIST

REPLACEMENT PARTS FOR IMPERIAL TOOLS LISTED BY TOOL NUMBER

Part numbers listed in boldface are available in the IMPERIAL Tool Parts Kit, Catalog No. 143-F

CATALOG NUMBER OF TOOL	PART NUMBER	DESCRIPTION OF PART	CATALOG NUMBER OF TOOL	PART NUMBER	DESCRIPTION OF PART
37-C	1279	Hex Head Cap	48-A	36922	Body
	24604	Outer Pipe		39030	Valve Assembly
	24605	Inner Pipe		39035	Neoprene Washer
	24606	Nozzle		69067	Nozzle Assembly
	24607	Tube Guide		25384	Compressor Cone
	27174	Flexible Metal Tube Assembly		32638	Yoke Assembly
	140-C	Hose Connection	93-FB	32640	Compressor Cone
37-CA	28729	Stem Assembly		36849	Bolt
	24604	Outer Pipe		36850	Bolt
	24605	Inner Pipe		38381	Bar Assembly
	24606	Nozzle		38388	3/16" Adapter
	24607	Tube Guide		38584	Wing Nut (2 required)
	29305	Hose Connection		68012	1/4" Adapter
	39030	Valve Assembly		68013	5/16" Adapter
	64201	Tube Assembly		68014	3/8" Adapter
	68528	Nozzle Assembly		68015	1/2" Adapter
	68558	Handle	103-FS	28359	Wing Nut (2 required)
47-A	68559	Stem Assembly		38903	Yoke Assembly
	36922	Body		38904	Compressor Cone Only
	36926	Nozzle		38905	Bar Assembly
	39030	Valve Assembly	141-A		
	39035	Neoprene Washer		See 143-A	

REPLACEMENT PARTS — Continued

CATALOG NUMBER OF TOOL	PART NUMBER	DESCRIPTION OF PART	CATALOG NUMBER OF TOOL	PART NUMBER	DESCRIPTION OF PART
142-A See 143-A 143-A			260-FH Cont.	68485 68486 68487 68488 68489 68490 68492	Stud Base $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", & $\frac{3}{4}$ " O.D. Shoe Thumb Screw Handle Handle Extension Wheel Assembly for $\frac{1}{2}$ " O.D. (consists of 68493 Wheel, 68482 Stud, 39038 Name Plate, and 33000 Knob).
193-FA	141-A 39022 39023 39026 39029 39030 39035 25384 37369 38584 62242 278-FS	Body Intermediate Length Nozzle Extra Length Nozzle Short Nozzle Flat Nozzle Valve Assembly Neoprene Washer Compressor Cone Yoke Assembly Wing Nut (2 required) Bar Assembly Individual Swaging Adapters Specify Size: $\frac{1}{2}$ ", $\frac{5}{8}$ " or $\frac{3}{8}$ " O.D.		68493 68496 68497 68498 68499 68500 68501 68502 68506 68508 68510 68512 68518 68547 68548	Wheel for $\frac{1}{2}$ " O.D. Wheel Assembly Wheel Assembly for $\frac{5}{8}$ " O.D. (consists of 68497 Wheel, 68482 Stud, 39038 Name Plate, and 33000 Knob). Wheel for $\frac{5}{8}$ " O.D. Wheel Assembly Wheel Assembly for $\frac{3}{4}$ " O.D. (consists of 68499 Wheel, 68482 Stud, 39038 Name Plate, and 33000 Knob). Wheel for $\frac{3}{4}$ " O.D. Wheel Assembly Wheel Assembly for $\frac{7}{8}$ " O.D. (consists of 68501 Wheel, 68482 Stud, 39038 Name Plate, and 33000 Knob). Wheel for $\frac{7}{8}$ " O.D. Wheel Assembly Hook for $\frac{7}{8}$ " O.D. Wheel Assembly $\frac{5}{8}$ " & $\frac{7}{8}$ " O.D. Shoe $\frac{1}{2}$ " & $\frac{3}{4}$ " O.D. Shoe $\frac{3}{4}$ " O.D. Shoe $\frac{5}{8}$ " & $\frac{3}{4}$ " O.D. Shoe $\frac{7}{8}$ " O.D. Shoe Hook for $\frac{1}{4}$ " O.D. Wheel Assembly Hook for $\frac{3}{16}$ " O.D. Wheel Assembly
194-S	32644 36849 36850 38584 38593 69947 25384 36279 37369 38584 28357 28359 38586 64250 64252 64253 68012 68013 68014 68015 68016 68017	Rivet Bolt for open end of bar (6-sided) Bolt for pivot end of bar (4-sided) Wing Nut Yoke Assembly Bar Assembly Compressor Cone Bar Assembly Yoke Assembly Wing Nut (2 required) Bolt Wing Nut (2 required) Bolt Yoke Assembly Compressor Cone Bar Assembly $\frac{1}{4}$ " Adapter $\frac{3}{16}$ " Adapter $\frac{3}{8}$ " Adapter $\frac{1}{2}$ " Adapter $\frac{5}{8}$ " Adapter $\frac{3}{4}$ " Adapter			
195-FA	28357 28359 38586 64250 64252 64253 68012 68013 68014 68015 68016 68017	Bolt for open end of bar Rivet Wing Nut Bolt for pivot end of bar Yoke Assembly Compressor Cone Bar Assembly $\frac{1}{4}$ " Adapter $\frac{3}{16}$ " Adapter $\frac{3}{8}$ " Adapter $\frac{1}{2}$ " Adapter $\frac{5}{8}$ " Adapter $\frac{3}{4}$ " Adapter			
195-FB	28357 28359 38586 64250 64252 64253 68012 68013 68014 68015 68016 68017	Bolt for open end of bar Rivet Wing Nut Bolt for pivot end of bar Yoke Assembly Compressor Cone Bar Assembly $\frac{1}{4}$ " Adapter $\frac{3}{16}$ " Adapter $\frac{3}{8}$ " Adapter $\frac{1}{2}$ " Adapter $\frac{5}{8}$ " Adapter $\frac{3}{4}$ " Adapter			
203-FA	28357 28358 28359 38586 38903 38904 70603 28359 38903 38904 60515 33045 61936 26883 32633 68257 68258 63587 68019 66634	Bolt for open end of bar Rivet Wing Nut Bolt for pivot end of bar Yoke Assembly Compressor Cone Bar Assembly Wing Nut (2 required) Yoke Assembly Compressor Cone Only Bar Assembly Cutting Wheel Screw for Cutting Wheel Screw for Cutting Wheel Cutting Wheel Cutting Wheel Screw for Cutting Wheel Pair of Die Blocks in Base Pair of Die Blocks in Base Hook for $\frac{3}{8}$ " O.D. Wheel Assembly	296-FA	30009 36849 36850 37369 38584 64464	Rivet Bolt for open end of bar (6-sided) Bolt for pivot end of bar (4-sided) Yoke Assembly Wing Nut Bar Assembly
203-FS	28357 28359 38903 38904 60515 33045 61936 26883 32633 68257 68258 63587 68019 66634	Bolt for open end of bar Rivet Wing Nut Bolt for pivot end of bar Yoke Assembly Compressor Cone Bar Assembly Wing Nut (2 required) Yoke Assembly Compressor Cone Only Bar Assembly Cutting Wheel Screw for Cutting Wheel Screw for Cutting Wheel Cutting Wheel Cutting Wheel Screw for Cutting Wheel Pair of Die Blocks in Base Pair of Die Blocks in Base Hook for $\frac{3}{8}$ " O.D. Wheel Assembly			
206-F	66642 66914 68267 68478 68479 68480 68481 68483 68484	Hook for $\frac{3}{4}$ " O.D. Wheel Assembly Screw Hook for $\frac{1}{2}$ " O.D. Wheel Assembly Wheel Assembly for $\frac{3}{8}$ " O.D. (consists of 68479 Wheel, 68482 Stud, 39038 Name Plate, and 33000 Knob). Wheel for $\frac{3}{8}$ " O.D. Wheel Assembly Hook for $\frac{3}{8}$ " O.D. Wheel Assembly Spring Washer Wrench Assembly Wrench	270-F See Parts List on Page No. 29. 274-FA	60225 60232 60233 60769 69516 70119	Reamer Blade Spring Washer for Reamer Blade Screw for Reamer Blade Cutting Wheel Screw for Cutting Wheel Cutting Wheel for Stainless Steel and Hard Temper Tubing
227-F			275-FS	38584 38593 38600 38766 38767	Wing Nut (2 required) Yoke Assembly without cone or adapters Compressor Cone Bar for $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ " and $\frac{7}{16}$ " O.D. Tubing Bar for $\frac{1}{2}$ ", $\frac{5}{8}$ " and $\frac{3}{4}$ " O.D. Tubing
227-FP					
251-F			300-F	39859 68752	Yoke Assembly Die Holder Assembly
256-F			312-F 312-FA	26883 60225 60232	Screw for Cutting Wheel Reamer Blade Spring Washer for Reamer Blade
260-FH					
See Illustrations on Page 30. Unless otherwise indicated parts listed here are common for 260-FH, 350-FH, 360-FH, 361-FH, 362-FH, 363-FH, and 365-FH					

REPLACEMENT PARTS — Continued

CATALOG NUMBER OF TOOL	PART NUMBER	DESCRIPTION OF PART	CATALOG NUMBER OF TOOL	PART NUMBER	DESCRIPTION OF PART
312-F	60233	Screw for Reamer Blade	400-F	68050	Drive Nut Retaining Spring
312-FA	60769	Cutting Wheel	Cont.	68146	Flaring Cone Roller Retaining Cap
Cont.	69516	Screw for Cutting Wheel		69063	Yoke Assembly Complete
	70119	Cutting Wheel for Stainless Steel and Hard Temper Tubing		69064	Flaring Cone
				69065	Flaring Cone Rollers (3 required)
312-FP	72474	Cutting Wheel	406-F	69966	Cutting Wheel
	72475	Screw for Cutting Wheel		69967	Screw for Cutting Wheel
337-F	338-F	Adapter only (specify size)	408-F	71089	Wing Nut
	339-F	Cutter Assembly (w/o cutter)	409-F	71110	Screw for Adapter
	340-F	Cutter Blade for $\frac{3}{16}$ ", $\frac{1}{4}$ " and $\frac{5}{16}$ " fittings		410-F	Handle
	341-F	Cutter Blade for $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{5}{8}$ " fittings		411-F	Adapter Only. Specify Size: $1\frac{3}{8}$, $1\frac{5}{8}$, $2\frac{1}{8}$ " O.D.
345-F	346-F	Adapter only (specify size)	437-F	61982	Yoke Assembly
	347-F	Cutter Assembly (w/o cutter)		61983	Compressor Cone for former model having threaded cone
	348-F	Cutter Blade		61984	Die Holder Assembly Complete
350-FH			500-F	61851	Die Holder Assembly Complete
See 260-FH				67861	Yoke Assembly Complete
360-FH			507-F	64743	Die Holder Assembly Complete
See 260-FH				68008	Yoke Assembly Only
361-FH				68009	Cone Only
See 260-FH			537-F	61948	Yoke Assembly Complete
362-FH				61952	Rollers for Flaring Cone (3 required)
See 260-FH				61960	Die Holder Assembly Complete
363-FH			555-F	70348	45° Flaring Cone Only
See 260-FH			557-F	70349	37° Flaring Cone Only
364-FH	66634	Hook for $\frac{5}{8}$ " O.D.	559-S	560-S	Swaging Adaptors Only
	66642	Hook for $\frac{3}{4}$ " O.D.			Specify Size Required: $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ or $\frac{5}{8}$ " O.D.
	66914	Hook retaining Screw for $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ " and $\frac{7}{8}$ " O.D.	600-F	36185	Crank Retaining Hex Nut
	68267	Hook for $\frac{7}{16}$ " and $\frac{1}{2}$ " O.D.		62144	Mandrel for $\frac{1}{4}$ " O.D.
	68490	Handle for $\frac{5}{8}$ ", $\frac{3}{4}$ " and $\frac{7}{8}$ " O.D. (Two required for each)		62149	Mandrel for $\frac{5}{8}$ " O.D.
	68502	Hook for $\frac{7}{8}$ " O.D.		62153	Mandrel for $\frac{1}{2}$ " O.D.
	69871	Spring Washer under Hook Retaining Screw for $\frac{3}{8}$ " O.D.		62159	Mandrel for $\frac{3}{8}$ " O.D.
	69872	Hook for $\frac{3}{8}$ " O.D.		62163	Mandrel for $\frac{5}{16}$ " O.D.
	69873	Hook Retaining Screw for $\frac{3}{8}$ " O.D.		62167	Mandrel for $\frac{1}{4}$ " O.D.
365-FH				62182	Mandrel Retaining Stud
See 260-FH				62184	Following Bar for $\frac{5}{8}$ " and $\frac{3}{4}$ " O.D.
374-FA	60225	Reamer Blade		62185	Following Bar for $\frac{3}{8}$ " and $\frac{1}{2}$ " O.D.
	60232	Spring Washer for Reamer Blade		62186	Following Bar for $\frac{1}{4}$ " and $\frac{5}{16}$ " O.D.
	60233	Screw for Reamer Blade		62187	Crank Assembly Less Retaining Nut
	60769	Cutting Wheel	637-F	64219	Yoke Assembly Complete
	66418	Constricting Roller		64227	Rollers for Flaring Cone (3 required)
	69516	Screw for Constricting Roller		64231	Die Holder Assembly Complete
375-FS	32640	Compressor Cone			
	36849	Bolt			
	36850	Bolt			
	38584	Wing Nut (4 required)			
	38766	Flaring Bar for $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ " and $\frac{7}{16}$ " O.D.			
	38767	Flaring Bar for $\frac{1}{2}$ ", $\frac{5}{8}$ " and $\frac{3}{4}$ " O.D.			
	38769	Yoke Assembly			
384-F, 384-FA	62094	Locking Assembly Complete			
	74050	Locking Assembly Pivot Screw			
	62105	Saw Guide Face Plate, Large (2 required)			
	62106	Saw Guide Face Plate, Small (2 required)			
	62107	Saw Guide Face Plate Retaining Screw with recessed head (4 required)			
	62108	Saw Guide Face Plate Retaining Screw with round head (4 required)			
400-F	60232	Gauge Retaining Screw Spring			
	60233	Gauge Retaining Screw			
	61818	Gauge			
	61809	Yoke Only			
	61825	Drive Nut Retaining Screw			
	61826	Die Holder Assembly Complete			

COMMONLY NEEDED REPLACEMENT PARTS FOR FLARING AND CUTTING TOOLS LISTED BY PART DESCRIPTION

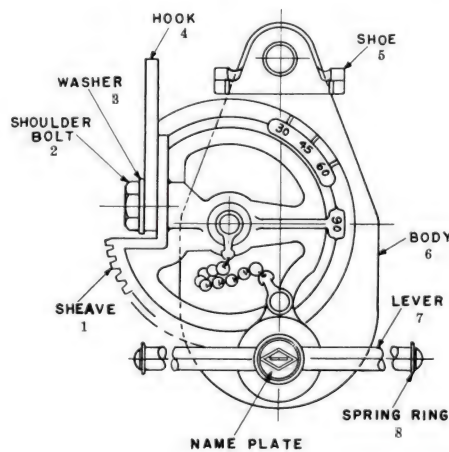
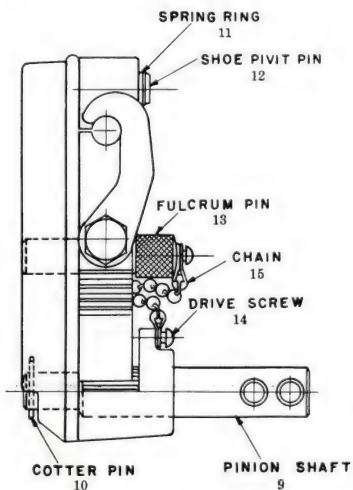
Part numbers listed in boldface are available in the
IMPERIAL Tool Parts Kit, Catalog No. 143-F

PART	PART NUMBER	TOOLS WHICH USE PART
Yoke Assemblies	32638	93-FB, 175-F
	33465	93-F, 195-FB
	37369	193-F, 193-FS, 195-F, 195-FS, 193-FA, 195-FA
	37677	295-FS
	38593	275-FS, 276-FS, 194-S
	38769	375-FS, 376-FS
	38903	103-FS, 203-FS
	38983	203-FA
	39859	300-F
	61948	537-F
	61982	437-F

REPLACEMENT PARTS — Continued

PART	PART NUMBER	TOOLS WHICH USE PART
Yoke Assemblies Cont.	64219 64250 64459 67861 68008 69063 71470	637-F 195-FB 95-FS, and former 93-FS 500-F 507-F 400-F 296-FA
Bar Assemblies	30077 30231 36279 38381 38766 38767 38905 60515 61293 61826 61851 61960 61984 62242 64231 64253 64464 64743 68752 69947 70603 36849	93-F, and former 93-FS 95-F, 95-FS 95-F, 95-FS, 195-F, 195-FS, 195-FA 375-FS, 275-FS 376-FS, 276-FS 103-FS 203-FS 295-FS 400-F 500-F 537-F 437-F 193-F, 193-FA, 193-FS 637-F 195-FB 296-FA 507-F 300-F 194-S 203-FA For open end of bar (6-sided) — 93-F, 95-F, 95-FS, 193-F, 193-FA, 193-FS, 194-S, 195-F, 195-FA, 195-FS, 275-FS, 276-FS, 375-FS
Bolts for Bar Assemblies	36850	For pivot end of bar (4-sided) — Same tools as above

REPAIR PARTS FOR IMPERIAL NO. 270-F GEAR TYPE TUBE BENDERS



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Size	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.	PART NO.
3/8"	62244	62245	62246	62247	62250	62251	62252	62253	62254	62255	62257	62258	62838	62836	62839
1/2"	62261	62264	62246	62263	62262	62260	62269	62253	62268	62255	62266	62265	62840	62836	62839
5/8"	62275	62280	62279	62278	62277	62276	62284	62285	62283	62255	62281	62282	62841	62836	62842
3/4"	62305	62294	62298	62307	62306	62288	62292	62297	62291	62255	62296	62295	62835	62836	62837
7/8"	62302	62294	62298	62304	62303	62288	62292	62297	62291	62255	62296	62295	62835	62836	62837
1"	62299	62294	62298	62301	62300	62288	62292	62297	62291	62255	62296	62295	62835	62836	62837
1 1/8"	62287	62294	62298	62290	62289	62288	62292	62297	62291	62255	62296	62295	62835	62836	62837

**FOR IMPERIAL BLUE-DOT COMBINATION LEVER-TYPE TUBE BENDERS
NOS. 260-FH, 350-FH, 360-FH, 361-FH, 362-FH, 363-FH, and 365-FH**



NEW IMPERIAL TOOLS

No. 199-F KWIK-TITE RATCHET WRENCH

Speeds assembly of tube and hose fittings; hex nuts, bolts and fasteners. Positive locking action of jaws. Move handle as little as 30° for new grip. Chromium plated handle.

Wrench Sizes for Fittings

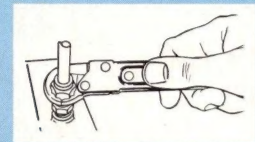
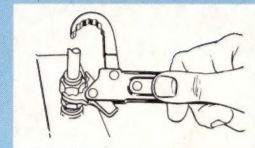
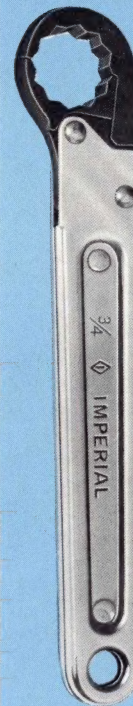
Type Fitting	Tube O.D. of Fitting							
	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"
Hi-Seal	1/4"	9/16"	3/8"	11/16"	3/4"		7/8"	1"
Hi-Duty	3/8"	3/8"	7/16"	1/2"	3/4"	11/16"	3/4"	
Inverted Flare		3/8"	7/16"	1/2"	3/4"		3/4"	7/8"
Compression Standard	3/8"	7/16"	1/2"	9/16"	3/4"	11/16"	13/16"	15/16"
Compression Long Nut	7/16"	1/2"	9/16"	3/4"	3/4"		15/16"	15/16"
Flex		1/2"	9/16"	3/4"	3/4"	11/16"	15/16"	
Heavy Duty 45° Flare		3/8"	3/4"	3/4"	3/4"		1"	
Flare (37°)	3/8"	7/16"	9/16"	3/4"	11/16"		7/8"	1"
Series 900, Flare (45°)								
Nylo-Seal	3/8"	7/16"	9/16"	3/8"	3/4"	13/16"	7/8"	

No. 199-F Kwik-Tite Wrenches

Catalog No.	Nut Hex. of Wrench	Overall Length
199-F 3/8	3/8	5 1/16
199-F 7/16	7/16	5 7/32
199-F 1/2	1/2	5 1/4
199-F 9/16	9/16	5 5/16
199-F 5/8	5/8	6 15/16
199-F 11/16	11/16	7
199-F 3/4	3/4	7 1/16
199-F 13/16	13/16	9
199-F 7/8	7/8	9
199-F 15/16	15/16	9
199-F 1	1	9

Wrench Size for Hexagon Nuts and Bolts

Hex Bolt and Nut Sizes by Thread Diameter	Wrench Required	
	For S.A.E. Standard Regular, Semi-Finished & Finished Hex Bolts	For S.A.E. Standard Jam Nuts Slotted Nuts, Regular & Thick Hex Nuts
1/4"	7/16"	7/16"
5/16"	1/2"	1/2"
3/8"	9/16"	9/16"
7/16"	3/4"	11/16"
1/2"	3/4"	3/4"
9/16"	13/16"	7/8"
5/8"	15/16"	15/16"



KWIK-TITE RATCHET WRENCH KITS

Roll-up type vinyl kit.

No. 299-F Contains 3/8", 1/2", 5/8", 3/4", 7/8", 1" wrenches.

No. 399-F Contains 1/2", 9/16", 5/8", 3/4" wrenches.

No. 403-S SWAGING TOOL

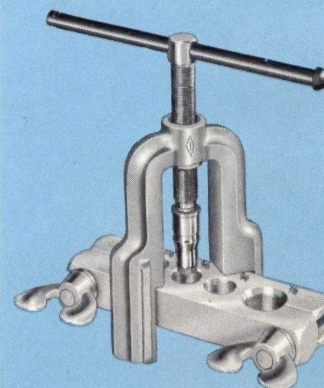
Swages 5/8, 3/4, 7/8", 1 1/8" O.D. (1/2", 5/8", 3/4", 1" nominal)—soft copper, aluminum, brass tubing. Screw type—far easier to use in close quarters than hammer type tools.

No. 403-S Swaging Tool. Wt. 5 1/2 lbs.

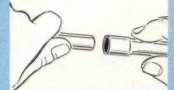
Extra Parts

No. 70966 Yoke Assembly	No. 70974 3/4" O.D. Adapter
No. 70965 Bar Assembly	No. 70975 7/8" O.D. Adapter
No. 70973 5/8" O.D. Adapter	No. 70976 1 1/8" O.D. Adapter

Pat. Nos. 2,072,359; 2,278,932; 2,553,813; Pat. Can. 1953



Accurate swaging makes reliable joints.



No. 208-FSS INNER-OUTER REAMER

For Stainless Steel Tubing

Has high speed steel cutters. Reams inside and outside edges of aircraft grade stainless steel tubing; hard or soft copper, aluminum, brass and steel tubing.

No. 208-FSS Inner and Outer Reamer. Wt. 10 oz.

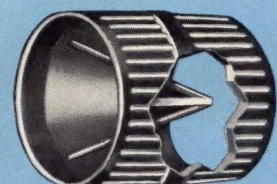
Pat. No. 2,242,821.

REAMING CAPACITY

3/16 to 1 1/2" O.D. (1/8 to 1 1/4" nom.)

No. 208-F Reams copper, aluminum, brass and other tubing.

No. 208-FSS Reams aircraft grade stainless steel tubing; hard or soft copper, aluminum, brass and steel tubing.



SEE OTHER NEW IMPERIAL TOOLS
ON INSIDE OF FRONT COVER





EMBLEM OF QUALITY

IMPERIAL-EASTMAN TUBING TOOLS AND SERVICE AIDS

Prices are subject to change without notice. Prices do not include any State Taxes.

Catalog No.	Page No.	Price Each	Catalog No.	Page No.	Price Each	Catalog No.	Page No.	Price Each
37-CA	23	\$11.95	199-F 7/8*	31	\$ 3.55	364-FH 1/2	15	\$14.65
47-A	23	1.85	199-F 15/16*	31	3.55	364-FH 5/8	15	26.25
48-A	23	2.05	199-F 1*	31	3.55	364-FH 3/4	15	35.20
93-FB	10	10.45	203-FA	9	10.45	364-FH 7/8	15	40.95
93-S 3/16	20	.70	206-FA	4	9.50	364-FH 1	15	45.40
93-S 1/4	20	.70	208-F	14	3.00	365-FH	16	43.60
93-S 5/16	20	.80	208-FSS	15	10.00	366-FR	15	26.25
93-S 3/8	20	.75	227-F	4	2.05	374-FA	5	5.20
93-S 1/2	20	1.00	227-FP	5	2.90	375-FS	8	9.40
93-S 5/8	20	1.40	240-F 1/4	22	1.15	376-FS	8	6.60
93-S 3/4	20	1.60	240-F 5/16	22	1.55	381-FA	25	107.15
93-S 7/8	20	2.15	240-F 3/8	22	1.85	383-FA	25	120.55
94-S*	20	2.25	240-F 1/2	22	2.05	384-FA	6	25.95
101-F	17	2.70	251-F	10	20.50	390-FA	25	66.75
			256-F	14	23.90	391-F	18	54.05
102-F 1/4	17	.35	260-FH	16	91.35	392-F	19	94.60
102-F 5/16	17	.35	261-G	24	1.70	393-F	19	93.70
102-F 3/8	17	.40	269-G	24	4.75	394-F	18	74.95
102-F 7/16	17	.60	270-F 3/8	15	13.15	397-F	31	Discontinued
102-F 1/2	17	.65	270-F 1/2	15	18.65	399-F*	31	10.50
102-F 5/8	17	.70	270-F 5/8	15	22.30	400-F	12	31.25
103-FS	9	11.80	270-F 3/4	15	25.45	401-F	14	12.10
105-FF	21	3.90	270-F 7/8	15	26.20	402-F	12	43.85
112-F	17	1.10	270-F 1	15	28.90	403-S	31	25.95
120-F	19	14.30	270-F 1-1/8	15	29.35	406-F	5	14.25
121-F	19	17.55	270-G	24	6.25	407-FA	13	390.60
122-F	18	14.85	271-F	15	3.95	408-F	9	38.85
123-F	18	12.10	274-FA	4	4.15	409-F	9	16.30
124-F	18	15.25	275-FS	11	16.50	410-F	9	6.00
140-C	24	.35	276-FS	11	10.25	411-F 1-3/8	9	5.75
140-F 1/4	22	.80	278-FS	11	1.80	411-F 1-5/8	9	6.20
140-F 3/8	22	1.00	296-FA	9	4.15	411-F 2-1/8	9	8.30
140-F 1/2	22	1.15	299-F*	31	16.90	414-SK 1/2	21	1.76
140-F 5/8	22	1.35	300-F	7	7.30	414-SK 5/8	21	1.88
140-F 3/4	22	1.40	302-F 3/8	17	1.00	414-SK 3/4	21	2.34
140-F 7/8	22	1.45	302-F 1/2	17	1.45	414-SK 7/8	21	2.69
140-F 1-1/8	22	1.85	302-F 5/8	17	2.00	414-SK 1-1/8	21	3.86
140-F 1-3/8	22	2.10	312-FA	4	5.10	414-SK 1-3/8	21	7.32
140-F 1-5/8	22	2.35	312-FP	6	5.70	414-SK 1-5/8	21	8.94
141-A	24	2.70	337-F	21	25.75	414-SK 2-1/8	21	12.60
142-A	24	3.10	338-F	27	1.60	414-SL 1/2	21	1.76
142-F	22	4.00	339-F	27	15.70	414-SL 5/8	21	1.88
143-F	26	213.50	340-F	27	3.00	414-SL 3/4	21	2.34
143-A	24	5.05	341-F	27	3.00	414-SL 7/8	21	2.69
163-F	17	1.95	345-F	21	20.95	414-SL 1-1/8	21	3.86
184-F	6	43.00	346-F	28	1.65	414-SL 1-3/8	21	7.32
193-FA	8	5.10	347-F	28	12.60	414-SL 1-5/8	21	8.94
193-S	20	3.75	348-F	28	4.45	414-SL 2-1/8	21	12.60
194-S	20	10.45	350-FH	16	73.00	437-F	13	10.25
195-FA	8	5.20	360-FH	16	60.35	438-F	14	6.95
195-FB	10	20.75	361-FH	16	45.70	447-F	12	33.60
195-S	20	8.80	361-G	24	1.70	464-FH 3/8	2	11.35
199-F 3/8*	31	2.65	362-FH	16	36.25	500-F	7	10.45
199-F 7/16*	31	2.65	363-FH	16	49.90	500-FP	8	10.45
199-F 1/2*	31	2.65	364-FH 1/8	15	7.65	507-F	12	14.45
199-F 9/16	31	2.65	364-FH 3/16	15	7.90	537-F	13	45.95
199-F 5/8	31	3.20	364-FH 1/4	15	7.65	555-F	11	65.65
199-F 11/16	31	3.20	364-FH 5/16	15	9.20	557-F	11	65.65
199-F 3/4	31	3.20	364-FH 3/8	15	8.75	559-S	11,20	70.88
199-F 13/16	31	3.55	364-FH 7/16	15	16.75	560-S 3/16	11	2.05
						560-S 1/4	11	2.05

* Price Change

Catalog No.	Page No.	Price Each
560-S 5/16	11	\$ 2.05
560-S 3/8	11	2.05
560-S 1/2	11	2.05
560-S 5/8	11	2.05
600-F*	17	183.75
637-F	13	177.45
700-F	2	414.75
900-FA	7	13.25
1225-F	18	9.90
1226-F	18	10.00
1279	26	.25
24604	26	.90
24605	26	.45
24606	26	.20
24607	26	.20
25384	29	.60
26883	29	.10
27174	26	2.10
28357	27	.80
28358	27	.10
28359	29	.45
28502	ORDER 140-C	
28729	26	1.10
29305	ORDER 73611	
30009	29	.10
30077	29	3.85
30231	28	5.25
3253260
32633	29	.45
32638	28	3.25
32640	29	.70
32644	29	.10
33465	28	2.35
36273	28	2.90
36277	ORDER 62242	
36279	29	4.30
36849	29	.55
36850	29	.55
36922	26	.40
36926	26	.40
37369	28	2.95
37677	28	4.00
38381	29	4.45
38388	26	.95
38584	29	.40
38586	27	.80
38593	28	3.85
38600	29	1.25
38766	28	3.85
38767	28	3.85
38769	28	4.00
38903	28	4.25
38904	29	1.80
38905	29	7.95
39020	ORDER 141-A	
39022	27	.70
39023	27	1.05
39026	27	.95
39029	27	.65
39030	26	1.30
39035	26	.20
39859	28	2.75
60225	27	.80
60232	27	.20
60233	27	.30
60515	29	6.45
60769	29	.60
61293	29	6.50
61809	28	3.40
61818	28	.65
61825	28	.40
61826	28	12.85
61851	28	5.25
61936	29	.20
61948	28	29.50
61952	29	1.00
61960	28	27.50
61982	28	6.70
61983	Discontinue	
61984	29	5.25
62094	28	9.90
62104	ORDER 74050	
62105	28	.60

Catalog No.	Page No.	Price Each
62106	28	\$.70
62107	28	.30
62108	28	.05
62144	28	18.90
62149	28	15.50
62153	28	14.55
62159	28	12.85
62163	28	11.80
62167	28	10.50
62182	28	1.45
62184	28	17.45
62185	28	7.90
62186	28	5.25
62187	28	7.30
62242	29	3.85
62244	29	5.50
62245	29	.75
62246	29	.15
62247	29	1.35
62250	29	2.05
62251	29	3.80
62252	29	1.70
62253	29	.10
62254	29	3.15
62255	29	.10
62257	29	.10
62258	29	.45
62260	29	4.35
62261	29	8.40
62262	29	2.10
62263	29	1.60
62264	29	.85
62265	29	.65
62266	29	.10
62268	29	4.10
62269	29	1.68
62275	29	11.00
62276	29	5.50
62277	29	2.75
62278	29	2.30
62279	29	.10
62280	29	1.20
62281	29	.10
62282	29	.75
62283	29	4.40
62284	29	1.60
62285	29	.10
62287	29	14.50
62288	29	6.95
62289	29	3.40
62290	29	2.05
62291	29	4.05
62292	29	1.60
62294	29	1.90
62295	29	.95
62296	29	.10
62297	29	.10
62298	29	.40
62299	29	14.50
62300	29	3.40
62301	29	2.85
62302	29	12.80
62303	29	3.40
62304	29	2.05
62305	29	12.80
62306	29	3.40
62307	29	2.85
62835	29	1.30
62836	29	.10
62837	29	.25
62838	29	.95
62839	29	.35
62840	29	.65
62841	29	2.25
62842	29	.25
63587	27	4.35 PR
64201	26	1.10
64219	28	34.10
64227	28	1.00
64231	29	44.40
64250	29	10.30
64252	29	2.40
64253	29	16.80

Catalog No.	Page No.	Price Each
64459	29	\$ 2.80
64464	29	3.35
64743	29	5.05
66418	29	.85
66634	27	1.35
66642	27	1.45
66914	27	.55
67861	28	8.00
68008	28	11.00
68009	29	3.30
68012	26	1.00
68013	26	1.00
68014	26	1.30
68015	26	1.52
68016	27	2.10
68017	27	2.40
68019	27	5.45 PR
68050	28	.30
68146	29	.45
6812893
68257	29	.60
68258	29	.55
68267	27	.80
68478	27	9.35
68479	27	6.20
68480	27	.85
68481	27	.05
68483	27	3.10
68484	27	2.35
68485	27	.15
68486	27	4.65
68487	27	6.55
68488	27	1.45
68489	27	1.65
68490	27	2.25
68492	27	11.30
68493	27	8.70
68496	27	11.45
68497	27	8.30
68498	27	14.40
68499	27	10.50
68500	27	14.70
68501	27	11.10
68502	27	1.50
68506	27	4.50
68508	27	4.50
68510	27	3.05
68512	27	4.85
68518	27	4.60
68528	26	2.50
68547	27	.40
68548	27	.60
68558	26	1.70
68559	26	.95
68752	29	5.20
69063	28	25.95
69064	29	7.25
69065	28	1.35
69067	26	.65
69516	29	.10
69871	28	.15
69872	28	.60
69873	28	.20
69947	29	4.15
69966	29	1.35
69967	29	.60
70119	29	.65
70120	29	1.10
70348	29	2.95
70349	29	2.95
70603	29	7.80
71089	29	1.15
71110	28	.75
71470	29	2.70
72474	28	2.40
72475	28	.45
7361140
74050	28	.45
74447	26.15
74455	40.45
74460	24.45
74462	32.70

* Price Change.

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